DOCUMENT RESUME

ED 284 815 SO 018 341

AUTHOR Hernando, Agustin, Ed.
TITLE Geographical Education and Society. Papers Presented at Commission on Geographical Education International Geographical Union (Sitges, Spain, August 25-31, 1986).
INSTITUTION International Geographical Union.
PUB DATE 86
NOTE 166p.; Document contains small type.
PUB TYPE Collected Works - Conference Proceedings (021) -- Books (010)

EDRS PRICE MF01/PC07 Plus Postage.
DESCRIPTORS Area Studies; Cartography; Educational Technology; Elementary Secondary Education; Foreign Countries; *Geographic Concepts; Geographic Regions; *Geography Instruction; Gifted; *Maps; *Map Skills; *Social Science Research; Social Sciences

ABSTRACT

Educational discourse is totally completely imbued with the values that affect the societies to which individuals belong. Those in the field of geographical education must examine those values in order to determine what type of geographical education is best for each society. The following papers contribute to this knowledge: "Presentation" (Hernando); "Geographical Education and Society: The Changing Public perceptions of School Geography in the United States" (Stoltman); "Social Tasks of the Society and the Changes in School Geography Education" (Maksakovsky), "Treatment of the Mediterranean Region in Nigerian Secondary Schools" (Okpala); "The Influence of Culture, Education and Subject Tradition on the Teaching of the Mediterranean in British Schools" (Hall); "Research Perspectives for the Empirical Didactics of Geography" (Schrettenbrunner); "Gifted Children and their Development of Understanding Maps" (Gerber); "The Use of Pictures in the Teaching of Geography" (Wilczynska-Woloszyn); "An Examination of Some of the New Information Technologies and their Use in Canadian Geographic Education" (Green-Milber); "La Promotion des Aides Audio-visuelles a l'education Geographique: Orientations et realisations du Groupe de Travail Francais (C.N.G. Paris)" (Faugeres); "A Study of the Map Drawing Ability of Secondary School Pupils between the Ages 12 and 19" (Stimpson); "Work with Geographic Literature at lessons" (Tatjana); "Optimizing the teaching of Geography by Pictorial Education" (Idziak); "Enhancing Vegetation Appreciation: Class Projects from San Diego State University" (Fredrich); and "Geography for International Understanding - a World Perspective" (Hawbrich). (BZ)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED284815

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

SO018341

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Joseph P. Stoltman

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

INDEX

Presentation.
(A. HERNANDO).

Geographical Education and Society: The changing public perceptions of School Geography in the United States.
(J. STOLTMAN)

Social tasks ofthe Society and the changes in school Geography education.
(V. MAKSAKOVSKY).

Treatment of the Mediterranean Region in Nigerian Secondary Schools.
(J. OKPALA).

The influence of Culture, Education and Subject Tradition on the teaching of the Mediterranean in British Schbols.
(D. HALL).

Research Perspectives for the Empirical Didactics of Geography.
(H. SCHRETTENBRUNNER).

Gifted children and their development of understanding maps.
(R. GERBER).

The use of Pictures in the Teaching of Geography.
(M.M. WILCZYNSKA-WOLOSZYN).

An examination of some of the new information technologies and their use in Canadian Geographic Education.
(P. GREEN-MILBER).

La promotion des aides audio-visuelles a l'éducation géographique. Orientations et realisations du Groupe de Travail Français (C. N. G. Paris).
(L. FAUGERES).

A study of the map drawing ability of secondary school pupils between the ages 12 and 19.
(P. STIMPSON)

Work with Geographic Literature at lessons.
(F. TATJANA).

Optimizing the teaching of Geography by pictorial education.
(J. IDZIAK).

Enhancing vegetation appreciation: Class projects from San Diego State University.
(B. E. FREDRICH).

Geography for Interantional Understanding -a World Perspective.
(H. HAWBRICH).

BEST COPY AVAILABLE

PRESENTATION.

In the field of geographical education there exists both a centre and a periphery. The centre constitutes those countries that have developed institutions which allow them to become sensitive to the problems of geographical education teaching and learning, doing research into them and producing large quantities of material, as their extensive bibliography shows. Besides these countries there exist others in which that development has hardly been started as they are at different stages (1). Because of it the people, the organizations and the resources related to geographical education are limited or non-existant. Spain is to be found in this periphery and in this context the celebration of the Regional Conference and the meeting of its Commission on Geographical Education, is an extraordinary opportunity to get to know the most outstanding protagonists of this academic enterprise, their works and predominant ideas.

We do not doubt that reflection on the matters concerned, the methodology used to broach them and the valuation of the results will produce its fruits in the immediate future.

For the people positioned on the periphery and wishing to keep up to date with the trends in geographical education, their activity is set up like that of a spectator of the aforementioned scene with which they obtain a vision of reality somewhat different to that of its protagonists. In prime position, is an observer of different scenes to which he shows himself through different "windows". Thus, thanks to the many journals produced in the United Kingdom, Australia and the United States, one perceives their interests, methodologies, most significant problems, bibliographic production, among other contributions. Of course, each one of those "windows" provides a different image and therefore is worthy of being contrasted. In second place, in addition to spectator, he adopts a role of critic selecting and evaluating those ideas which fit in with his ideology and context.

Accordingly, this situation enjoys a certain amount of privilege, and it is that of getting to know, in a more objective way, the trends, confrontations, new ideas protagonists, the places where they emerge, and to reflect with different commitments on it.

From this perspective there exists a matter that has emerged with great force in the last decade, though evidently there are precursors. It is the matter of the dialectic between geographical education and society (2). Our educational discourse is totally impregnated with the values that affect the society to which we belong. As a consequence, it is interesting to question oneself concerning the corresponding attributes in the society dominated by our programmes, books, norms, the prevailing ideology of the teaching profession that, with its different behaviours, goes covering a few stages day by day. There is then, an ethical commitment. Evidently, empathy can help us to become sensitive to ourselves and to discover such dimensions. But only being immersed in other societies different to ours can lead us to conscience over the key question: What type of geographical education for that society ? Rejecting the imperialism of the ideas of the centre which are those that benefit its society and whose well-being is founded in the exploitation of other societies and territories, one must constantly examine the search of the aforementioned reply. We think that the following papers will contribute to it in a special way, as well as the initiating discussions..After the said meeting, we would like to be able to have criteria in order to respond to the factors that guide the said discourse: the features of the dominating society; the features of the education that inspires it (conservative or critical): the liturgy of our behaviour with its orthodox and heterodox aspects: the geography that we select as an instrument in relation to various goals: the protagonists responsible for this discourse.

In addition to this topic which is the one that most dominates the meeting, there exist others that have aroused interest and diverse contributions.

The first is the image of the Mediterranean area transmitted in the geographical communications of other countries and enjoyed by their recipients. It's a topic of great interest that reveals the stereotypes and distortions of the reality codified in our learning resources. This matter has been brought up in a general way at other meetings (3). We believe that it must be gone into deeply if one wants to adapt the said discourse to the reality and to go conforming the minds of our recipients gradually without fantasy and errors. Besides, we all like to know the image that is given and kept of us and our territory, in other countries and societies, above all so as to try and correct it if it does not satisfy us. And furthermore, at a stage in which the means of communication are the chief instigators and politics the most significant factor. For the narcissism of certain societies, it would be very relevant to get to know the image that is had of them in other countries, without fear of discovering realities and of the victimisation of finding enemies in all the other states. Romantic literature of the past and tourism are two of the principal channels for the projection of our own reality to the outside.

Finally, there exists a third group of communications related to the geographic image and its role in geographic education. If geography since its distant past has been linked to mapping, the technological development of our era has recently lead to a loss of interest in written verbal resources, dominant during the Gutenberg Galaxy, and a rise in visual ones. The nature of its own image, with its communicative advantages and motivating qualities, makes its use advisable in learning resources, at some stages more that at others. Nevertheless, we are ignorant of many of the effects in the recipients such as decoding, memorization, sequencing learning and other aspects that, providing that our discourse goes on displacing itself from the verbal to the iconic, will earn greater interest in the matter and new investigations will offer us criteria for its better design and presentation.

To all those involved, many thanks for your contribution. And to those who are present, welcome and we wish you a happy stay.

AGUSTIN HERNANDO

Local Organizer

NOTAS

(1) N. GRAVES (1981) : International aspects of Geographical Education. Journal of Geography. 80, pp. 84-86.

(2) Without doubt, one of the initial works is found in D. HARVEY (1974): What kind of Geography for what kind of Public policy. Transactions I.B.G., 63, pp. 18-24.
It is worth pointing out three of the topics that have presided over the last meetings in Australia: Geography: Action in Society, Geography: Education for relevance, and Teaching Geography for a better world.

(3) H.HAUBRICH (ed) (1984): Perception of People and Places through media. Freiburg: Pädagogishe Hochsule.
25th. International Geographical Congress.

GEOGRAPHICAL EDUCATION AND SOCIETY: CHANGING PERSPECTIVES ON SCHOOL GEOGRAPHY IN THE UNITED STATES

Joseph P. Stoltman
Western Michigan University
Kalamazoo, Mi. USA

Abstract

The development of geography in the school curriculum of the United States is traced from colonial days to the present. Historic periods of rigorous curriculum development are identified, with the current educational reform movement in the United States offering an opportunity for geographers to engage a program of reform within the social studies and geography curricula. Public perceptions of geography are presented, as well as status studies which chart the course of geography in the schools. The role of academic and professional societies in furthering geography is discussed, with an analysis of the individual geographer's role in any future changes which may improve geography's standing in the curriculum.

1.0 The Historical Role of Geography in Education

Geography has had a place in American education since the first educational systems were established in the colonies. Map and globe studies were included in the Harvard University curriculum in the 17th century (Warntz 1964). However, the roots of school geography developed in the elementary and grammar schools of the time, with college admissions examinations in geography being an important reason for its

inclusion in the curriculum. Geography Made Easy, the earliest American geography text was written by Jedidiah Morse in 1784 and found wide acceptance in the schools. However, the first actual records of public responsiveness to the importance of geography as a school subject developed after 1830. A positive view of geography by the public may be inferred since a number of states passed laws requiring the teaching of geography and the study of the geography of the home state (Rumble 1946).

Geography as a school subject continued its growth during the 19th century, but under considerable European influence. The Swiss educator, Johann Pestalozzi, was promoting the philosophy that direct observation and sense perception were essential to meaningful learning. As a result, map pages and line drawings became popular in textbooks. Map drawing, the study of the home region through direct observation, and experimentation using globes were introduced into the curriculum. A second European geographer, Arnold Guyot, also influenced school geography. A student of Karl Ritter, Guyot was interested in studying physical geography using the methods of scientific observation to which he had been introduced in Prussia. Upon his arrival in the United States, Guyot was appointed to the faculty at Princeton University where he authored numerous textbooks on physical geography (Fairbanks 1927). The influences of Pestalozzi, Ritter, and Guyot were extended to a young geographer named William Morris Davis who had became interested in and accepted the educational theories they proposed. Morris went on to become one of the most influential geographers in the development of American education during the early 20th century (James and Martin 1978).

In the eyes of the public, the content, scope, methods, and philosophy of geography in the schools matured significantly during the first 200 years in American education. The vague descriptions of geographic information in the curriculum of the 1700s had developed into an intricate explanation of the physical environment by the late 1800s, due in large part to the considerable influence which Morris exercised as a faculty member at Harvard University. Instructional methods in the physical geography which Morris supported had changed from the recitation of factual information with an inadequate status in the curriculum to a recognized approach to studying geography as an earth science (Stowers 1962).

2.0 Educational Review Committees Influence Geography

Educational review on a national scale in the United States is generally in response to social, economic or political pressures. Different agencies of government gather data and present interpretive reports on a periodic basis. While the main reporting agency is the Department of Education, numerous other reports are made on a regular basis by professional organizations and societies.

The first major report on education in the United States had a major influence upon geography. Referred to as the Report of the Committee of Ten, it recommended that physical geography and physiography should be the most important geographical offerings in the secondary schools (NEA 1894). Four years later, the Science Section of the National Education Association evaluated physical geography as a high school offering. The recommendation was that the leading ideas of physical geography, with no human studies included, should remain the foremost offering in secondary

school geography (NEA 1898). Another report was issued in 1909, again the result of a national review effort. The Committee of Seven of the Science Section of the National Education Association made the following recommendations.

1. Geography should be, in some form, a required subject in all secondary schools.
2. The subject should be pursued for not less than one year.
3. The subject should be presented during the first year of the high school course.
4. There should be at least five recitation periods per week.
5. About one-fourth of the total time should be devoted to the larger topics of physical geography, with the human side made more prominent than at present, and that the remainder of the year be given to a study of North America and Europe (Chamberlain 1909).

Unfortunately, the strength of the recommendations for geography in the 1909 report were dissipated by yet another report. In 1911 the National Education Association commissioned a secondary school curriculum review which included an assessment of the role of the newly developing social studies movement in American education. The Committee recommended that all of the social aspects of geography be included in the social studies (U.S. Bureau of Education 1916). The social studies was to encompass all of the social sciences within a single field of study, with no discipline boundaries. Having the endorsement of the National Education Association, the social studies movement gained considerable momemtum, and by 1934 two trends which were to have long term influences on geographical education in the United States had emerged. First, the general science curriculum subsumed most of the physical geography which had been proposed in the 1898 report. Second, the regional and human aspects of the discipline were developing rapidly, and they fit much more nearly the intent of the social studies than did

physical geography (James 1962). The positioning of geography within the social studies capitalized upon the human emphasis. Educators observed that geography with a human focus swept the nation (Lemaire 1946).

3.0 Status Studies of School Geography

Numerous studies of the status school geography were carried out between 1950 and 1982. Three of those studies are of particular importance for this paper. In 1956, the National Council of Geography Teachers made a national study of schools in order to determine the status of geography. The survey revealed that in 65 percent of schools, geography was part of the social studies curriculum rather than an independent course (NCGT 1956). Among the major problems facing the movment of geography to become an independent subject in the schools were:

1. A crowded curriculum.
2. Need for qualified teachers.
3. Need for better textbooks.
4. Improvement in the elementary school curriculum.
5. More understanding and knowledgeable administrators.
6. Geography requirements for college admissions.

A comprehensive status study of geography in education was completed nearly ten years later (Mayo 1965). The following observations regarding geography during the nine year period from 1956 to 1965 suggest that the subject has slipped even further in its role as a school offering.

1. Physical geography has been neglected completely.
2. Human geography offerings were sparse.
3. In the social studies, geography was not given equal time with history or other social sciences.
4. Geography was rarely found in the high school, and was increasingly left out of the junior high school curriculum.
5. Geography teachers usually had their academic background in history.

6. The chronological approach was favored over the spatial approach to social studies.
7. Administrators and teachers lacked an understanding of what geography was and what it should encompass.
8. There was a lack of adequate time in the curriculum for both history and geography on an equal basis.

Sixteen years later, another status study reported that the position of geography in junior high schools had declined precipitously (Manson 1981). Much of the decline in the status of geography was due to the rise of the social studies. Beginning in the 1980s, less geography was being included in the curriculum of the nation's schools than at any time in the prior fifty years.

The reports of the status studies seemingly went unheeded during the period, with few attempts to marshall public suport for geography in the schools. There were curriculum development activities initiated during the period, but the influence of those activities on public perception of geography was minimal.

4.0 National Curriculum Movements

The educational system of the United States does not follow a singular curriculum nationally. Each of the states has autonomy in setting educational requirements and within each state there are local education agencies which exercise autonomy in establishing curriculum and selecting classroom materials. However, since 1964 the public perception of geography has been influenced by four curriculum movements of national magnitude: the Curriculum Guide for Geographic Education; the High School Geography Project; the Scope and Sequence in the Social Studies; and the Guidelines for Geographic Education.

The Curriculum Guide for Geographic Education was published by the

National Council for Geographic Education (Hill 1964). The intent of the guide was to provide curriculum assistance throughout the United States. A detailed set of sequences for grade level content made up the major contribution of the Guide. A theme was recommended for each year, followed by a series of units of instruction. The document was widely used during the 1960s, being viewed as a comprehensive approach to geography within the social studies. It was especially helpful to elementary school curriculum planners and administrators.

The High School Geography Project (HSGP) was a national curriculum development activity designed to introduce the new geography of the 1960s into the high school. Undertaken with considerable funding from the National Science Foundation, the Project developed a one year geography course consisting of six units of study. The units included: urban geography; habitat and resources; political geography; cultural geography; manufacturing and agriculture; and Japan. Included were models, slide sets, recordings, and simulation activities designed to assist students in concept development. Despeite the fact that HSGP first reached the schools nearly 15 years ago, attempts to determine its influence on the school curriculum in the United States have been sporadic rather than systematic from a research perspective. Few researchers have obtained objective data regarding the influence of HSGP on public perception of the discipline and anaylzed influences and trends. General enrollment statistics reveal that geography continued to lose ground during the 1970s, the period of HSGP's greatest influence in the secondary schools. One is left to infer that the actual influence of the Project on geography in the high schools of the United States was less than needed in order for

the discipline to become a growth area in the secondary school curriculum.

While the United States lacks a national social studies curriculum, the publishers of commercial textbook series have maintained a constant commitment to one curriculum model over the past fifty years. It is referred to as the expanding environment curriculum and represents the national social studies curriculum of the United States. The Scope and Sequence in the Social Studies is the curriculum model proposed by the National Council for the Social Studies (NCSS 1984) and reflects very closely the expanding environment. The curriculum model begins with the student in the first year of school studying the school and family and expanding outward in subsequent grades to study the community, the nation, the hemispheres and finally the globe. In the NCSS curriculum guide, there is a substantial amount of geography in the first eight years (K - 7). Beginning in the eighth year of schooling, the amount of geography diminishes considerably, with an elective in the last year of high school being the only option. Even within the areas which concentrate upon geography, it is usually an even time allocation to history and geography due to the bias towards history of the social studies model, especially in the secondary school.

The Guidelines for Geographic Education (AAG-NCGE 1984) represent the most recent document aimed at clarifying and promoting the role of geographical education in the schools of the United States. The Guidelines carry the endorsement of two professional societies, the Association of American Geographers and the National Council for Geographic Education. While recognizing the problems which have and do plague geography in the nation's schools, the organizations take a proactive role in suggesting

ways in which problems may be addressed. The currricular recommendations of the Guidelines have had a far reaching impact, placing a clearly designed statement about geography in the hands of teachers and administrators. Five fundamental themes in the teaching of geography are developed in the Guidelines. They are: 1) Location (position on the earth's surface); 2) Place (physical and human characteristics); 3) Relationships Within Places (humans and environments); 4) Movement (humans interacting on the earth); and 5) Regions (how they form and change). A skills component is also recommended. It includes the following: 1) Asking Geographic Questions; 2) Acquiring Geographic Information; 3) Presenting Geographic Information; 4) Analyzing Geographic Information; and 5) Developing and Testing Geographic Generalizations. While it is still too early to determine the overall impact of the Guidelines, the response from local and state education agencies has been very positive. There is little doubt that geography instruction, including the identification of content and objectives had nearly become a lost art form in schools in the United States. The active participation by professional societes of geographers has contributed enormously to the revitalization of the subject. For the first time since the early 1900s, American geography, through the Guidelines, has addressed pre-college education with a unified, comprehensive approach to content, scope and sequence and curriculum development.

5.0 Public Perceptions of Geography

The public's image of geography in the United States has two characteristics. First, during times of international crisis the schools come under criticism because the "person on the street being interviewed

by the media" doesn't know where Korea, or Vietnam, or Grenada, or some other global hot spot is located. Second, it is the perception of most people in the United States that geography's first responsibility is to teach place location, with little else following. As professional geographers, we realize the fallacies which underly such perceptions. However, a review of a series of public opinion polls focusing upon education beginning in 1969 reveal some aspects of geography as a school subject.

The Gallup Polls of Attitudes Toward Education have been carried out each year since 1969. The Polls do two things. First, they identify the issues which people feel are confronting the schools. Secondly, they survey a wide range of adults in the United States to determine their opinions regarding those issues. The first nine years of the Polls are easy and straightforward with reference to geography, or any study which resembled geography (world studies, global studies, international education). There were no references to the study of geography in the schools!

In 1978, the question was asked in the Poll, "What requirements, if any, would you set for graduation from high school for those students who do not plan to go on to college . . . .?" The opinion that to "know something about the major nations of the world today, their kind of government, and their way of life" was believed to be very important by 42 % of the respondents, fairly important by 46 % of the respondents, not important by 10 % of the respondents, and no response by 2 % (Elam 1978). While not overwhelming in support of geography, it alerted the geographic profession to the latent concern regarding geography within the American

public. The Polls carried out over the next several years, however, suggested little desire on the part of the American public to give greater attention to geography in the curriculum of the nation's schools.

In 1980, the Gallup Poll contained a question directed toward global education rather than geography. While there is considerable uncertainty regarding how the global perspectives of either may differ in more than title, the question presented by the Poll did have a direct concern for geographers. About one-half of the respondents felt more time should be devoted to learning about other nations of the world and how people live (Gallup 1980). The message, it seems, was clearly that geography is an important element in a person's education. If it is not included in the curriculum by the schools, then it probably will remain as a knowledge deficit within the population.

Despite the fact that problems facing geography in the schools have not been resolved and a large proportion of students are still classified as geographically illiterate, the 1981-1985 Gallup Poll of Attitudes Toward Education revealed little regarding geography in the schools. Perhaps this suggests that the pendulum of public opinion has begun to swing away from geography in the United States. Just as the appearance of geography as an issue in education surfaced in 1978, with the response from the geographic community developing by 1984, perhaps the absence of it as an issue in 1985 suggests the period of public attention has ended. Perhaps without strong professional leadership and a constant posturing on geography's behalf, the discipline will lose its hard won recognition of the past several years and slip into a period of stagnation or decline.

6.0 The Role of Professional Societies in Geography

The need for strong professional, academic society support for geography in the schools is apparent. Such endorsement gives the clientele, in this case geography teachers and curriculum planners, the assurance that they are following guidelines which carry the academic credentials of the society or profession. New initiatives in geographical education in the United States are being supported by the Association of American Geographers and the National Council for Geographic Eduction. The Geographic Education National Implementation Project (GENIP 1985) has coordinated the activities of a number of individuals and local geographical associations in promoting the educational aspects of the discipline. Gaining additional support from the National Geographic Society and the American Geographical Society, the goal for improving geography teaching in American schools has achieved a high degree of momentum. The leadership of the National Geographic Society has repeatedly pledged its support and encouraged the support of other societies in leading a renaissance in geographic education in the United States.

The most important and truly grassroots efforts for improving geography teaching in the schools of the United States is coming from individual geographers. The call to advocacy has been heard and plans for action have been initiated at local and state levels by individual members of the professional societies. The result has been the formation of a network of concerned geographers who are writing about geographic education for public consumption, are presenting state and local workshops for geography teachers, and are becoming members of

influential national, state, and local committees responsible for making decisions about the school curriculum. Those individuals, along with the support of the professional societies, provide the essential element in furthering the degree and quality of geographic instruction in the schools (Stutz 1985; Lanegran1986; Salter 1986; Stoltman and Sweet 1986; Morrow-Jones 1986; Natoli 1986).

7.0 The Future

"This is a time of extraordinary opportunity for educators who wish to bring their curricula, classrooms, and mission into productive alignment. It is fitting that geography and geographers play a role in this far-reaching reform effort" (Gardner 1986). The above quotation espresses very well the situation in the United States in 1986. Considerable progress has been made, but the potential is there for enormous progress in improving geography's presence and quality in the school curriculum, most notably the secondary school. Plans of action are being disseminated through the professional literature of geography (Salter 1986), which reveals two things about the future. First, there are a large number academic leaders in the field of geography who recognize the unique opportunity which the discipline is experiencing. Alliances of academic geographers, school administrators, and geography teachers are forming to plan for the future as well as to make progress today. Secondly, the publication of articles in the Annals and The Professional Geographer, the two most important professional journals for geographers, addressing the improvement of pre-college geography signifies that the profession has a commitment to planning for the future of geography in the schools of the United States.

8.0 References

AAG/NCGE. Guidelines for Geographic Education. Washington, D.C.: Association of American Geographers, 1984.

Chamberlain, J. Report of the Committee on Secondary School Geography. National Education Association Journal of the Proceedings and Addresses. Topeka: National Education Association, 1909.

Elam, S. A Decade of Gallup Polls of Attitudes Toward Education 1969 - 1978. Bloomington: Phi Delta Kappa, 1978, p. 353.

Fairbanks, H. Real Geography and Its Place in Schools. San Francisco: Herr Wagner Publishing, 1927.

Gallup, G. The Twelfth Annual Gallup Poll of the Public's Attitudes Toward the Public Schools. Phi Delta Kappan. September 1980, p. 45.

Gardner, D. Geography in the School Curriculum. Annals. Association of American Geographers, Washington, D.C., March 1986, pp. 1-4.

GENIP. Newsletter. Association of American Geographers, 1710 16th St. N.W., Washington, D.C. 20009, 1985.

Hill, W. Curriculum Guide for Geographic Education. National Council for Geographic Education, Series No. 3, Normal State Illinois University, Normal, Illinois, 1964.

James, P. Geography. In The Social Studies and the Social Sciences, by Bernard Berelson and others. The American Council of Learned Societies and the National Council for the Social Studies. New York: Harcourt, Brace, and World, Inc., 1962, pp. 42 -87.

James, P. and G. Martin The Association of American Geographers: The First Seventy Five Years 1904 - 1979. Washington, D.C.: Association of American Geographers, 1978.

Lemaire, M. A Universal Subject - Geography for the Secondary School. School Science and Mathematics, April 1946, pp. 355-358.

Lanegran, D. Strengthening Geographic Education. The Professional Geographer, February 1986, p. 71.

Manson, G. Notes on the Status of Geography in American Schools. Journal of Geography, Vol. 80, December, 1981, p. 244.

Mayo, W. The Development and Status of Secondary School Geography in the United States and Canada. Ann Arbor: University Publishers, 1965, p. 97.

Morrow-Jones, H. The Colorado Experience. The Professional Geographer, February 1986, pp. 74-75.

National Education Association. Report of the Committee of Ten on Secondary School Studies. New York: American Books Co., 1894.

National Council of Geography Teachers. The Status of Geography in the Secondary Schools of the United States. Special Publication Number 4, 1956, p. 7.

National Council for the Social Studies. In Search of a Scope and Sequence for Social Studies. Social Education, April 1984, pp. 249-262.

Natoli, S. The Importance of Redundancy and Eternal Vigilance. The Professional Geographer, February 1986, pp. 75-76.

Rumble, Heber. "Early Geography Instruction in America." The Social Studies (October 1946) pp. 266-268.

Salter, C. Geography and California's Educational Reform: One Approach to a Common Cause. Annals, Association of American Geographers, March 1986, pp. 5-17.

Salter, C. Response to Stutz's "Enhancing High School Geography." The Professional Geographer, February 1986, p. 72.

Stoltman, J. and Sweet, J. The Michigan Experience in Geographical Education. The Professional Geographer, February 1986, pp. 73-74.

Stutz, F. Enhancing High School Geography at the Local Level. The Professional Geographer, November 1985, pp. 391-395.

Stowers, D. Geography in American Schools, 1892 - 1935: Textbooks and Reports of National Committees. Unpublished doctoral dissertation. Duke University, 1962.

U.S. Bureau of Education. The Social Studies in Secondary Education: Report of the Committee on the Social Studies. Washington, D.C.: U.S. Bureau of Education, Bulletin No. 28, 1916.

Warntz, William. Geography Now and Then. New York: American Geographical Society, 1964.

V.P.Maksakovsky

SOCIAL TASKS OF THE SOCIETY AND THE CHANGES IN SCHOOL GEOGRAPHY EDUCATION

The reform of the comprehensive and vocational school which is being implemented now in the USSR has opened some new opportunities for teaching geography. This subject is being studied at school during 357 periods. As the result of great work undertaken in 1985 the geography curriculum has been significantly changed, both in content and structure and in methodical approach.

The main aims of school geography were figured out during the work at the curriculum. The stratagic aim of all educational and upbringing process of Soviet school is the building of a harmonically developed personality, the improvement of our people as active, mentaly and spiritually rich personalities,patriots. Geographical knowledge is an important integrial part of general culture. And this aspect distinguishes the role of geography as one of the most important scientific-methodological, political and applied subjects of Soviet school.

The USSR school geography has rich traditions which must not only be carefully preseved at present time, but enriched even more. In the light of contemporary requirements the main educational and upbringing tasks of school geography are as follows:

1. to ensure profound knowledge of the basic elements of geographycal science, which plays an important role in contemporary scientific-technological and social progress of the humanity, being both a natural and a social science, as well as fundamental and constructive. To show bright and many faceted geographical picture of the world; to give an idea about natural and social-economic basis of economy, scientific approach to processes and phenomena which happen in nature and society; to explain the main tendencies of spatial (territorial) development with the help of theories and concepts of geography and other sciences connected with it..

2. To reveal continiously and convincingly the main methodological ideas of school geography, to show their close connection with life, practice of communist construction, to make schoolchildren aquainted with Lenin's works, party and state documents, the USSR Constitution, to use to better advantage the possibilities of geography in patriotic, moral, esthetic,atheistic and physical education of our youth.

3. On the basis of geography the pupils work out dialectical outlook on nature, population and economy, their interaction, develop geographical thinking, become convinced in the materiality of the world and ability to learn the laws of nature. The pupils are shown the universal character and variety of nature of the Earth. The task is to explain the notion "geographical environment" as a necessary condition for life and functioning of society, to show the process of interaction between the society and nature in different social-economic systems.

4. To make pupils acquainted with political and economic maps of the world, with the main trends of the contemporary world political and economic development, with the global problems of the humanity and the ways of their solution; to reveal the essence of economic cooperation and competition between the two systems, to explain internal and foreign policy of the USSR; to reveal the aggressive to socialism ideology, reactionary geographical concepts.

5. To pay primary attention to studing of our own Motherland - the Soviet Union, to make pupils systematically acquainted with natural conditions and resources of the USSR and the problems of their reasonable utilization, with geographical and demographical aspects of population, with building of the leading branches of our economy, interbranch, territorial-industrial complexes and integral economic comllex of the USSR, to explain economic and social policy of the CPSU and Soviet Government, the content and goals of Food, Energy Programs of the USSR, the Complex Program of the development of Consumer Goods production and Services, to explain spatial aspects of five-year-plans, the place and role of the USSR in the world socialist economic system, international policy and economt.

6. To ensure economic education and development of the modern-type of economic thinking of our pupils, to give them a general idea about the contents and main trends of the scientific-technological progress, its features in the USSR and other countries of socialist community, to explain the key-tasks of the contemporary stage of economic development - to speed up social-economic development on the basis of speeding up the scientific-technological progress, to introduce some economic and general technical notions to pupils.

7. To promote ecology education and development of ecological thinking, to make pupils acquainted with the essence of utilization of nature, tasks and ways of optimization of the process of interaction of the society and nature, basic knowledge in socialist reasonable utilization of nature, to educate schoolchildren in the spirit of careful attitude towards natural treasures of the USSR.

8. On the basis of geography to show the human role in economic and social life on the society, to explain the notion "population" as the main productive force, to prove the growing significance of the non-productive sphere in the epoch of the scientific-technological revolution, to show the opposite approach of socialism and capitalism towards the matter.

9. To provide schoolchildren with the skill to apply acquired knowledge to practice, to acquaint them with the rules of behaviour in nature, at an enterprise, to teach them to describe geographical phenomena and processes, to find out their particular features and reasons, to introduce various professions connected with geography and other Earth sciences to them and help them to choose any one.

10. To use wigely modern methods of teaching, which are based on individual creative activity of schoolchildren, to help them acquire habits and skills of learning, to enrich the forms of classes, tended at the development of individual work and creativity, to try to use textbooks and other books of teaching book complex to major extent, to use intersubject connections and the connections within one subject, to develop skills of work with maps, statistical materials and other sources of knowledge, to establish more optional courses.

Diring work at this new curriculum the authors realized first of all the necessity to create a contemporary geographical picture of the world for the pupils, which along with physical, chemical, biological and historical and otherscomposes the necessary part of the universal scientific picture of the world. The growth of the part of fundamental, theoretical knowledge (theories,concepts and hypothesis of geographical science) is clearly seen.

The major difficulty was to distinguish that aspect which would separate general geographical education, which constitutes the basis of geögraphical culture of young generation, from specific scientific knowledge which will be in need for only professional geographers. As examples difficult climatic classifications or some unnecessary details in the field of mathematical cartography, the concept of energoindustrial cycles may be given.

The main, the most important items stressed in the latest curriculu were reflected first of all in much more thoroughful selection of general notions, the number of which in all the five courses is limited to 65 which is much less than it used to be. And the succession in the introduction of these notions year by year, one level after another is much better.

Simultenioualy with the growth of the part of fundamental knowledge the number of various details and facts which were extra load on

pupils' minds in curriculum and textbooks had been reduced. In the new curriculum the organizing role of theory towards facts had been strengthened. This is also one of the most complex and, at the same time, principle questions which concern not only this curriculum but most of the school curricula.

Lately, the geographical science has worked out several main trends of its development which concern various branches of this science. The task was to reflect them in school geography. That is why the new curriculum pays special attention to them. The most important of them are connected with more full use of studing geography in economic and ecological education of pupils. Sociological aspect is also strengthened. In accordance with this, the name of the courses of"economic geography" had been changed to "economic and social geography".

The general polytechnical and constructive tendency of the curriculum is clearly seen. The constructive approach becomes more and more typical for modern geography. It concerns first of all the knowledge connected with reasonable utilization of natural conditions and resources, spatial organization of population and industry,the development of microelectronic machinery, which is typical for the modern STR.

Habits and skills, connected with the culture of human behaviour in nature, at work, at a concrete working place are especially important. The column "Pupils must know how" includes : 1) to observe rules of preservation-of-nature behaviour in everyday life; 2) to make an economic-geographical characteristic of an enterprise; 3) to analyse various maps,schemes,figures,tables and come to certain conclusions on the basis of such analysis; 4) to find on the basis of statistical materials figures showing the growth of culture, education, health-protection in republics,regions. This may be esteemed as an important contribution to the solution of the problem of improvement of labour upbringing and assistance in the choice of professions. The System of practical works and excursions is also mentioned here.

In the new curriculum the principle of scientific basis of education is closely connected with the tasks of shaping the outlook of pupils. It is possible only when all the basic knowledge is gained. The strengthening of ideolcgical-political content of school geography follows the way of sharper adn more logical reflection of methodological ideas in all the courses. More than half time is spent on the studing of the Soviet Union, countries of socialist community in the new curriculum, and this aspect is paid main attention in all the five courses of geography. The attention to studing of the political map of the world is also strengthened and it begins much earlier than it used to be.

As far as the structure of the subject is concerned, it is closel connected with its content, and here the new curricular comes from the necessity of a complex approach. There is hardly more important structure innovation than the creation of the principally new, integral course "Geography of the USSR" which includes both nature, population and economy of the country and at the same time preserves the division on physical and economic geography as two main branches of the science as well as a school subject. At the end of this course pupils will complexly study the geography of their republic, region. The course of the 7th form will no lonfer remain the course of purily regional physical geography but it will actually become the course of integral regional geography, which school geography lacks so much. The problem is more complicated when concerns general geographical basis. General physical geography will be represented in the curriculum, as well as at now only by the introductory course in the 6th form.

The curriculum of the optional course "The basics of constructional geography" is prepared for the 11th form. The teacher's Book with the same name as well as the textbook has been written by the collective of authors from the Institute of Geography of the Academy of Sciences of the USSR. The present course of economic geography of foreign countries of mainly regional geography character has been transformed into the course of economic and social geography of the world.

The new curriculum reflects the improvement of the methods of teaching this subject, the ideas of developing education, including the acquiring of skills of individual work, learning, the creation and solution of problem situations, the work at acquiring knowledge and skills on three levels. This will permit the teacher to transform easily to more progressive forms of a lesson, to be not so much the main source and commenter of knowledge, but a scientific-methodical adviser.

The typological approach to geographical objects is strengthened in the curriculum, and a local study approach is mainly preserved and strengthened. The lessons of summing up the knowledge are of principle significance. They permit to use the inductive way for the introduction of new material. The formulations of the main requirements to knowledge and skills of pupils are closely connected with corresponding chapters and themes; the list of geographical names is also included.

In general, the new geography curriculum is a document, reflecting the social demand of Soviet society at the present stage of its development. It will serve a good basis for the creation of standard textbooks of geography of a new generation.

TREATMENT OF THE MEDITERRANEAN REGION IN NIGERIAN SECONDARY SCHOOLS (INDICATIONS FROM SYLLABI, TEXTBOOKS AND SCHOOL CERTIFICATE GEOGRAPHY EXAMINATION QUESTIONS)

PAPER PRESENTED AT THE

REGIONAL CONFERENCE ON THE MEDITERRANEAN COUNTRIES COMMISSION ON GEOGRAPHICAL EDUCATION (I . G . U)

SITGES, SPAIN

25TH TO 31ST AUGUST 1986

BY

JULIE OKPALA (MRS)

UNIVERSITY OF NIGERIA, NSUKKA.

INTRODUCTION

Geography is taught in senior secondary classes in Nigeria and is examined as a school certificate subject by the West African Examinations Council. Between 1985 and 1987 two geography syllabi- the old and the new will be in operation in Nigerian secondary schools. The old syllabus for students on the five-year programme terminates in June 1987 with the programme.The new syllabus was introduced in September 1985 for students on the six- year secondary programme and will be examined for the first time in June 1988. Geography curricula in both programmes emphasize equipping the Nigerian child with necessary principles, concepts ,skills and values for effective living not only in his society but also in the world. Hence in the rationale for the new curriculum (NERC,1985:iii) it was emphasized after the old curriculum (Okunrotifa,1973:18) that geography should enable students to:

> develop sympathetic understanding of the people of other lands based upon the recognition that they have different ensembles of resources, different goals and different problems from the people of their home areas.

Therefore while geography teaching in secondary schools predominantly emphasize local studies and understanding of home regions - Nigeria, West Africa and Africa- an attempt is made to teach geography of other lands. The Mediterranean Europe which consists of three peninsulas —the Iberian,the Italian and the Balkan — as well as European coastal lands and islands washed by the Mediterranean sea referred to in this paper as the Mediterranean Region is taught.

An attempt will be made in this paper to elucidate the teaching of the Mediterranean Region as could be deciphered from the two geography syllabi, geography textbooks and external examination questions.The syllabi would show the content specification while the content in the texts would show the scope as well as the depth which students are generally expected to attain in studying the region.The organisational structure of the syllabi and textbooks would be used in making inferences on the experiences which students would be exposed to in learning about the region. The examination questions on the other hand would reveal what is actually learnt as compared to the curriculum specification.They would be useful in making inferences on the methods of teaching used. Assertions made above on findings which would be made using the examination questions are upheld because educationists (Macintosh 1970, Morris 1972, Macintosh and Smith 1974, Marsden 1976, Lewy 1977) have unanymous view that whatever the curriculum prescription might be what guides teachers and students in selecting content areas to pay attention to and the level of processing to be involved in learning is the pattern of external examination questions.The first part of this paper will present qualitative data on the content of the syllabi, textbooks and West African School

Certificate geography questions relating to the Mediterranean Region. In the second part the information presented will be summarised. Lastly, there will be a discussion highlighting the implications of the observations made on the treatment of the Mediterranean Region for geographic education.

DATA ON THE TEACHING OF THE MEDITERRANEAN REGION

THE SYLLABI

The Old Syllabus

Physical Geography: Elements of Climate

Major types, characteristics, distribution, factors affecting distribution

Vegetation

Major types, characteristics, distribution, factors affecting distribution

Elements of World Human Geography:

Farming

Crop farming eg. Western Europe

Major Sources of Power

Actual and potential eg. Solar in Western Europe, the Mediterranean lands

(WAEC 1984:207-209)

The New Syllabus

The new programme specification in geography is very elaborate. In a tabular form it clearly specifies the themes, units, objecties, content, teaching methods, teaching aids and evaluation as guides for geography teaching. The units which involve teaching of the Mediterranean Region are specified below.

Theme	Unit	Objectives	Content	Teaching Methods	Teaching Aids	Evaluation
Classification of climate	Greek System of classification	Pupils should be able to describe the characteristics and the distribution of the different climatic types based on Greek system of classification	Tropical, temperate and polar climates	Discussion methods	World maps globes diagrams climatic data graphs	Teacher asks pupils to classify and describe the tropical, temperate and polar climates and show their distribution on the maps
	Koppens classification	Pupils should be able to classify climate using the Koppens method and describe the distribution and characteristics of each type	Climatic types: C.Humid mesothermal (Mediterranean)	Discussion method using sketches to to show where each climatic type is found Pupils to draw maps of the world showing Koppens classification. Recognising climatic types from statistics or graphs. Teacher demonstrates how climatic types may be interpreted from statistical graphs on rainfall and temperature.	World maps, globes climatic graphs	Teacher asks pupils to: a)classify and describe the characteristics of each climatic type and show its distribution b)draw graphs to illustrate climatic data provided for each type.
Climatic Types	Temperate (warm and cool)	Pupils should be able to locate the temperate climate and describe its characteristics	Characteristics (ie. temperature, precipitation etc.)	Discussion method using world maps temperature and rainfall charts to show locations and characteristics of the climates	Climatic data statistical charts world maps atlases etc.	Teacher asks pupils to show location of these climatic types on maps and explain their characteristics
	Interpretation of climatic data	Pupils should be able to analyse and interprete climatic data for the purposes of illustrating climatic characteristics	Climatic data on rainfall and temperature distribution with altitudinal variations where applicable) Seasonal variation, intensity, type and location	Presentation of climatic data and diagrams for analysis and interpretation by students on class, group and individual bases	Statistical data and statistical charts from different parts of the world	Teacher asks pupils to analyse and interprete climatic data and diagrams
World vegetation types	Cool temperate woodland	Pupils should be able to locate the areas and describe the characteristics of the temperate woodland	Deciduous, coniferous (their distribution climatic condition vegetation characteristics and plant communities	Discussion method illustrating with world maps and diagrams. Students should draw sketches and diagrams showing distribution	Maps, sketches, diagrams, films	Teacher asks pupils to show the distribution of cool temperate woodland on a world map and describe its characteristics.
World Trade	Major commodities	Pupils should be able to a)list the major commodities in world trade b)describe the major world trade routes	Major groups Agricultural products Manufactured products Mineral products World Trade Routes	Discussion method	Specimens of commodities, charts, graphs, pictures, films etc.	Teacher asks pupils to describe the major world trade commodities and explain their trade.

EXAMINATION QUESTIONS

Every year in the West African School Certificate geography examination at least one question is asked on Mediterranean areas which includes the Mediterranean Region. The questions are either the structured response type asked in Paper 1A or essay type as in Paper 1B. These papers examine General Geography which consists of Mapwork, Physical and World Human Geography Examples of typical questions asked in order to test understanding of the Mediterranean Region and areas, between 1971 and 1985, are given below.

1. 'Hard small leaves; hairy or glossy leaf surface; cork lined bark.' To which of the following vegetation types does the following description apply?
   - A Equatorial
   - B Tropical
   - C Semi-Desert
   - D Tundra
   - E Mediterranean

   (WAEC 1971)

2. Select the item in right hand which best matches the description on the left

Evergreen oak and bulbous plants with special adaptation to the summer drought	A. Monsoon Forest B. Savanna C. Conferous Forest D. Taiga E. Mediterranean

   (WAEC 1973)

3. Which of the following does not contribute to the total world production of wine?
   - A France
   - B Italy
   - C Portugal
   - D California
   - E British Columbia

   (WAEC 1975)

4. 'Rain falls mainly in winter; there is drought in summer, yet the vegetation is evergreen.' To which of the following climatic regions does this description refer?
   - A Monsoon
   - B Tropical Continental
   - C Mediterranean
   - D Tropical rainfall
   - E Warm temperate continental

   (WAEC 1985)

5. On the outline map, Map B provide
   - i mark one sea route from Darka (Senegal) to Marseilles (France) and mark and name its termini and one port of call along the sea route;
   - ii In your answer book:
     name two important commodities that are carried from Dakar to Paris via the sea route shown in(i) above and two other commodities that are carried from Paris to Dakar.

   (WAEC 1985)

TEXTBOOKS

Four textbooks are recommended in Physical and Human geography in the old syllabus. Two of these which are also recommended in the new geography programme will be discussed.

Adleke,B.O.and Leong,C.O (1978) Certificate Physical and Human Geography (West African Edition)

Weather, Climate and Vegetation: The Warm Temperate Regions: Western Margins (Mediterranean Type)

a) Distribution

b) Climate characteristics(illustrated with graphs, maps and statistics)
A dry warm summer with off-shore trades
A concentration of rainfall in winter with on-shore Westerlies
Bright, sunny weather with hot,dry summers and wet mild winters
The prominence of local winds around the Mediterranean Sea

c) Natural Vegetation
Types, favourable conditions and problems

d) Economic Development of the Mediterranean Region
Orchard farming -types,favourable conditions problems and byproducts
Crop cultivation: cereals,favourable conditions, problems and solutions
Wine production- favourable conditions, types of wine,other products from grapes with reasons.

e) A sample of Questions and Exercises
1.Outline the various types of natural vegetation found in the Mediterranean regions.Relate this to climate, soil and human interference.
2.Give an explanatory account of the following statements about economic activities of the Mediterranean lands:
i. Orchard farming is the predominant occupation.
ii. The chief cereal cultivated is hard,winter wheat.
iii. Pastoral farming is of little importance.

Agriculture:Types of Agriculture (reference to Chapter 19 for Orchard farming and Mediterranean agriculture)

A sample of Questions and exercises
1. The following crops are representative of some of the types of crops cultivated. Select one crop from each type:
Cereal: wheat, rice, maize
Beverages: tea, coffee, wine
Fibres: cotton,wool,silk
Raw materials:rubber, timber, oil palm
i.State what geographical factors influence their large-scale cultivation.
ii.State briefly some of their characteristic features of production,distribution,uses, problems and prospects.

Bunnet,R,B(1973) Physical Geography in Diagrams(Metric Edition(with Objective Exercises)

Climate: Warm Temperate Climates
Warm Temperate Western Margin Climate - Mediterranean Climate

a)Location
b)Climatic characteristics
Hot dry summer,warm wet winter
Winds:off-shore trades in summer and on-shore westerlies in winter
Local winds
c) Agricultural development
Mention of different cereals and fruits and their uses.

d) A sample of Questions and exercises
1.A Mediterranean Climate is characterised by very dry summers because
A.relative humidity is low.
B.skies are cloudless.
C.trade winds blow from the land to the sea.
D.there are no on-shore winds.
E.temperatures are high
2.This is a description of a specific climatic type 'Warm winter,over 15.5°C, and hot summers, over 25°C; on-shore trade winds blow throughout the year bringing rain in all months but with a maximum in summer.' Which one of the following climatic types does this describe?
A.Warm Temperate Western Margin
B.Tropical Monsoon
C.Warm Temperate Eastern Margin
D.Tropical Marine
E.Equatorial

Vegetation:The Forests
Mediterranean
a)Location
b)Characteristics; woodland type,adaptation,examples of trees
c)A sample of Questions and exercises
1.Make a list of main forest types and for two of these
i.name two types of common tree
ii.state whether the trees are deciduous or evergreen
iii.name one region where this type of forest occurs.
2.Some plants are in flower, others are in fruit,and other lose their leaves, all at the same time, in regions which have no seasonal climate changes.This type of plant occurs in
A. Coniferous Forest
B. Mediterranean Forest
C. Tropical Rain Forest
D. Temperate Evergreen Forests
3. Excluding the Mediterranean area, regions experiencing a Mediterranean Climate are usually located on the
A. west side of continents.
B. north -west sides of continents.
C. south-west sides of continents.
D. north-east sides of continents.
E. south-east sides of continents.

OBSERVATIONS ON THE DATA

Given below is a summary of observations made on the information available in the syllabi, textbooks and West African School Certificate geography questions on treatment of the Mediterranean Region in geographical studies in Nigerian secondary schools.

1. The Mediterranean Region is treated not as Special Geography but as General Geography predominantly under the envelope of Mediterranean Areas or Regions.
2. The syllabi,old and new,adopt a General Geography approach (Minshull 1967).
3. The textbooks adopt a General Geography approach which is strictly descriptive.
4. Aspects of the content consistently tested in the examination are:
   i. climate characteristics;
   ii. vegetation characteristics;
   iii. major agricultural product (grapes) and viticulture;
   iv. the Mediterranean sea as an important sea-route;
   v. commodities for international trade between the Mediterranean Region and the home region .
5. The level of processing or thinking demanded in tackling school certificate questions on the region is low. The questions demand mere remembering of characteristics, places and routes.

DISCUSSION

Information available on the treatment of the Mediterranean Region in Nigerian secondary schools has been presented and some observations made on it. The scope of work allocated to the Mediterranean Region in the syllabi, textbooks and the school certificate geography examination could be argued to be substantial considering that at present the space for studying regions outside the home region is limited. An observation of the texts structured after the syllabi shows that numerous descriptions and explanations of geographical elements are presented to the learners and some to very minute details.
The major issue,which is the concern of this paper,is , would the observed treatment of the Mediterranean Region contribute effectively in facilitating students' sympathetic understanding of people of other lands?

A curriculum prescription which emphasizes sympathetic understanding of people of other lands should be planned in a way that vital experiences could be provided to enable students conceptualise environmental situations of which they do not possess first hand experience. Conceptualising the situations would enable learners to fit ideas they encounter into their mental schema through assimilating new experiences to past learning which may itself be modified to accommodate the new. Conceptualization implies that the ideas become part of the learner's thinking and to him such ideas have meaning and usability.

Pitcheeel (1982) in emphasizing the aims and values of geography teaching at present times insists that the discipline is no longer simply a listing of facts and features of the various parts of the earth. It now makes use of facts to study the problems of spatial relations on earth, problems which are made manifest by overpopulation, underdevelopment, urban sprawl, regional planning, agrarian reform, and land-use policies.

Teaching of geography of the Mediterranean Region in Nigerian secondary schools is simply a listing of facts. This could be inferred from the contents of the syllabi and the school certificate geography questions. The syllabi provide lists of geographical elements. The textbooks and geography teachers provide guidelines on essential facts on these to be learnt. Although the new syllabus purports to develop the content of geography from themes, it still maintains the status-quo. Geography teaching with the old syllabus is dominated by dictation and copying of notes and sections from textbooks (Arowosegbe et al 1981, Okpala 1983). It could be inferred from the specification of the new syllabus that the strategies used in teaching it will emphasize factual information as much as the old syllabus. The level of processing involved in the objectives stated on the new syllabus confirm this assertion. The objectives (see p.3) require describing, classifying, listing and locating geographical elements. Teaching- learning situation based on this type of objective cannot lead to fulfilment of the terminal objective which emphasizes understanding.

Walford (1981) supports experiential learning as a means for clarifying ideas and issues in geography which is essentially concerned with human welfare. He emphsizes that if students are expected to understand what is essentially human about different societies, they must seek not only to observe but to enter imaginatively into the problems and issues which face particular groups. He suggests that in order to make learning meaningful, relevant and interesting strategies such as discussion on issues and problems, inquiry, games, simulation and case studies should be involved.

With reference to questioning, researches (Hunkins 1968, Watts and Anderson 1971, Mckenzie 1972,) have shown that the level of questioning anticipated in an examination particularly external influence students' pattern of study. High level questions demand of individuals higher intellectual activities and processes than low level question. Questions asked on the Mediterranean Region in West African School Certificate geography examination demand low level intellectual processes. Preparing students for answering questions which demand mere remembering of locations and characteristics (see p.4) cannot provide opportunities for probing, discovering, thinking, analysing and searching which are essential for effective learning and understanding.

EDUCATIONAL IMPLICATION

The major observation made in this paper is that teaching of geography of the Mediterranean Region in Nigerian secondary schools predominantly emphasizes mere provision of factual information on the region. This has some implications for geographic education in Nigeria and other countries of the world.

In this paper there is evidence of lack of validity of the objective of geography teaching which purports understanding of people of other lands. Understanding involves the ability to think critically and to make judgement about issues and problems concerning other people. It involves clarification of values and attitudes. Understanding of people of other lands is relevant to the learner in as much as such situations have some relationship with his welfare and existence in his immediate environment. This implies that whatever is taught about people of other lands must be relevant and meaningful to the learner. There is need for tact in selecting from numerous geographical information available on other lands what is necessary for students from particular environmental situations to assimilate. In planning teaching of geography of other lands some basic issues must be clarified. The major question is:

> What will the students bennefit from learning about people from this particular country or region?

Other subsequent questions are:

> Would this study enable the students to understand the people?
> Would this study make any contribution to the students' understanding of their own environment and environmental problems?
> What aspects of geography of such people would best serve as ingredients for acieving the objectives of the study?

Clarification of these basic issues would lead to planning appropriate conseptual framework for the themes, teaching strategies and evaluation procedures. Any geography programme which overlooks clarification of these issues in planning teaching of geography of other lands will most probably load students with factual information like a storeroom filled with junk.

SUGGESTIONS

The curriculum plan of geography of other people should be based on a thematic approach expressed not as low order concepts which list criteria and define attributes but as statement of issues on higher order concepts. The units and content of work will then be drawn on problems on relevant environmental and geographical elements. Relevant countries and people will be used as case studies. An example is given below.

Theme: Devising alternative strategies for tackling problems of economic development.

Units: Problems of Agricultural Development
Problems of Industrial Development
Problems of Communication

With reference to Nigerian students, the unit relevant for studying the Mediter-

ranean Region is'Problems of Agricultural Development'.The content of study will consist of factors and elements influencing development of agricultural sector of economy.This includes availability of land based on physical as well as human factors. Examples of physical factors are :climate,topography and soil.The major human factor is the land ownership system.Another factor is availability of financial resource for agricultural development.Other content areas related to this factor might include the country's other economic resources and wealth,distribution of facilities and the political situation.Some problem areas of the Mediterranean Region, examples Mezzogiorno in Italy (Mountjoy 1982) and Andalusia in Spain(Naylon 1975), provide case studies for this unit. The primary objective would be understanding why tourism is an alternative economic activity to agriculture in Andalusia with for example the purpose of educating students to appreciate the need for devising alternative strategies for economic progress. The case study of Andalusia will highlight why and how this otherwise wasteland,due to its physical disadvantages, has become economically viable.

In using this approach,the need for studying climate, vegetation, physical features, soil and even socio-politico situation in the Mediterrancan Region will arise naturally. Students will be motivated to learn.It would be interesting and educative to a Nigerian student learning with Andalusia to observe that regional disparity and problems of agricultural development exist in developed countries. Thinking about problems of agriculture will not be strange to him as he comes from a basically agricultural background. The present study would be meaningfully assimilated in his mental schema.A curriculum organised along this line would demand pupil-orientated approaches. Another advantage is that the dicotomy existing between different branches of geography will be bridged substantially.

It is important to note that a thematic issue-based plan does not necessarily assure teaching for understanding. The examination should emphasize problem-solving and decision making as an incentive for teachers to utilize stimulating and mentally exacting strategies in teaching.

CONCLUSION

This paper has attempted to make a qualitative analysis of the treatment of the Mediterranean Region in Nigerian secondary schools as deciphered from geography syllabi,textbooks and questions asked in school certificate geography examination.Substantial content area is allocated to the Mediterranean Region in the syllabus and examination questions.The structure of the syllabi is the discriptive General Geography approach. Content of textbooks and examination questions based on such syllabi emphasize accumulating factual information. This approach is criticized as it is unlikely to focus attention of teaching and learning to understanding of people of other lands. A thematic approach in which issues and problems of human concern form the basis for curriculum framework

and draws instances for case studies from various relevant environmental situations is recommended. This approach implemented with appropriate inquirying and problem solving teaching strategies and examination tasks, it is hoped ,would make learning about other people relevant, interesting and intellectually exacting to students.

REFERENCES

Adeleke,B.O.and Leong,G.C (1981), Certificate Physical and Human Geography West African Edition, Ibadan: University Press Ltd.

Arowosegbe,J.O.et al. (1981),'A Survey of Teachers' Methods of Teaching Mapwork in Geography in Secondary Schools in Enugu,Awka, and Igbo-Etiti Local Government Areas in Anambra State' Unpublished B.Sc. Dissertation , Nsukka: University of Nigeria.

Bunnett,R.B.(1975), Physical Geography in Diagrams Metric Edition, London:Longman Group Ltd.

Hunkins,F.P. (1972), Questioning Strategies and Techniques, Boston: Allyn and Bacon.

Lewy,A. ed. (1977), Handbook for Curriculum Evaluation, Paris: UNESCO and Longman.

Macintosh,H.G.(1970),'A Constructive Role for Examination Boards in Curriculum Development', Journal of Curriculum Studies, 2,32-39.

Macintosh,H.G. and Smith,L. (1974), Towards a Freer Curriculum, London:University of London Press.

Maraden,W.E. (1976), Evaluating the Geography Curriculum, New York: Oliver & Boyd.

Mckenzie,G. (1972), 'The Effect of Frequent Quizzes on Inferential Thinking', American Educational Research Journal,9,231-240.

Minshull,R.(1967), Regional Geography : theory and practice, London: Hutchinson and Co. Ltd.

Morris, B.(1972), 'Examinations as Instruments of Educational Reform',in Morris in Morris,B. ed. Objectives and Perspectives in Education, London: Routledge and Kegan Paul.

Mountjoy,A.B.(1972), Problem Regions of Europe : The Mezzogiorno,2nd edition, Oxford:Oxford University Press.

Naylon,J. (1975), Problem Regions of Europe : Andalusia, London: Oxford University Press.

Nigerian Educational Research Council NERC (1985),National Curriculum on Geography for the Senior Secondary School, Lagos:NERC.

Okpala,J.I.N. (1983), 'The Link Between Teacher Education and The Teaching of Geography in Nigerian Secondary Schools' Unpublished M.A. Geography in Education Dissertation, London: University of London.

Okunrotifa,P.O.(1973), 'The Objectives of Geographical Education', in Majasan,J.A. and Adejuyigbe, O. Curriculum Innovation in Nigerian High School Geography. Ibadan: The Institute of Education, University of Ibadan and The Nigerian Geographical Association.

Pinchemel,P. (1982),'The Aims and Values of Geographical Education', in Graves, N.J. ed. The UNESCO Source Book for Geography Teaching, Paris: Longman / The Unesco Press.

Walford,R. (1981), 'Geographical Games and Simulation: Learning Through Experience' Journal of Geography in Higher Education,5(2),113-119.

Watts, G. and Anderson, R.C.(1971) ' Effects of Three Types of Inserted Questions on Learning from Prose', Journal of Educational Psychology, 62, 387-394.

West African Examinations Council WAEC (1971- 1985), West African School Certificate and G.C.E. Geography 1A and 1B. West African Examinations Council.

West African Examinations Council WAEC (1984),Regulations and Syllabuses for Joint Examinations for the General Certificate of Education (Ordinary Level) and for the General Certificate of Education (Advanced Level),Lagos:WAEC.

The Influence of Culture, Education and Subject Tradition on the Teaching of the Mediterranean in British Schools

David Hall (University of Bristol)

The Mediterranean world possesses a permanent fascination for us. Of what significance has it been in the Geography curriculum as taught in the schools in Britain? Have the changes in content, in focus and in purpose mirrored changes in the philosophy and methodology of geography as a discipline? Or have they responded more sensitively to arguments about the function and purpose of education in schools against the broader canvas of society itself, as the outlook and the behaviour of the culture itself has changed through time? In sum, I wish to reflect upon the way in which the study of the Mediterranean as a specific area has been revised and reinterpreted at school level and to trace the connections between these changes and those in schools, society and in geography itself.

What were the arguments which allowed geography as a subject to establish itself in secondary education at the turn of the century? Then it was prescribed by regulation that not less than 4½ hours per week be allotted to English, History and Geography (Maclure,1965). Britain was the workshop of the world and had an empire to govern: even those of humble estate should have some knowledge of geography to sense the status of Britain in the world. The emphasis was of course at the basic level of factual knowledge through Atlas and map: the learning of locational data and the distribution of the British colonies proclaimed in bold print and coloured red. The Mediterranean was important not for territory but for communication: an artery vital for the management of Empire with Gibraltar and the Suez Canal as gateways on the passage to India. The systematic study of the facts of world power is an early example of what I call vulgar geography(1982): the populist view of the subject which equates knowledge with empirical fact and an unambiguous view of the function of the subject in school and in society.

In parallel with this, Geography found itself part of another cultural tradition. In Victorian society a young gentleman became educated through an acquaintance with the classics, the intending cleric through familiarity with the origin of Christianity and its subsequent diffusion to West and North in which a knowledge of the geographical context in which Western civilisation arose was desirable. In addition, the intellectual, privileged by the good fortune of a private income, could move outwards from more formal studies to the delights of the Arts with their treasures in painting and in architecture scattered throughout this sunlit world. He could even become the amateur expert with a lifetime spent unravelling the mysteries of the ancient world through diligent and persistent archaeological investigation. The Geography of the Mediterranean in this social context was recruited for service to high, not to vulgar culture, establishing its legitimacy as a subject worthy of study through this connection with the elitist traditions of Classical and Liberal studies and the interests of the Church. In sum, the study of the Mediterranean as a self standing region was almost as important as its role as a routeway of an Empire where the sun never set.

After 1918 the Humanistic tradition, linked to the education of the privileged few to the peak of their intellectual capacities to become responsible guardians of society and its heritage, became of marginal concern. In the inter-war period the growth of Geography into respectability in academic circles at University level brought with it a more orderly, systematic, and rigorous description of place. In any respectable geography, the proper understanding of the uniqueness of regions was possible only if the description was underpinned by nomothetic language. The subtlety of difference could only be achieved by the deployment of generalised terms whose significance equally was only

effectively communicated to the initiated. Herbertson's papers on Natural Regions (1905) were a part of this transformation which had particular relevance to schools. In the 1920's and 30's Grammar Schools, selecting about 20% of the most able of the school population at eleven, were becoming of increasing importance to a nation seeking greater numbers of competent intellects to serve as administrators or junior managers in the expanding secondary and tertiary industries of a mobile, flexible and urbanised society.

Herbertson's schema was rationalistic. The selection and ordering of content was governed by a process of deductive reasoning based upon a set of casually driven operators. Climate was the superordinate concept which could be broken down into two principal components: temperature and rainfall. Further analysis identified four key factors causing temperature variation at any one place: latitude, continentality, the circulation of winds and ocean currents, and height above sea level. Seasonal and daily rythms were then considered. Rainfall incidence and intensity was equally the expression of the regularities of atmospheric pressure distribution and atmospheric circulation with three major types of trigger mechanism causing uplift of stable air: frontal, convectional, or relief. Although configuration and vegetation were considered by Herbertson, both were logically secondary variables, adding qualifications or revealing residuals within the major climatic framework.

The generic titles given to each major natural region emphasised the rational basis of the whole approach. It was important to use the correct nomothetic descriptors for each natural region. In this the Mediterranean was the victim of confusion; the correct generic term was held to be "west coast warm temperate margin", but this clumsy and pedantic terminology was usually abandoned and the term "Mediterranean" used both generically and specifically. The whole matter became arcane, as arguments arose that the climate of the Mediterranean itself was not the best example of the general type, and that the true Mediterranean climate was in Central Chile!

There were two other unfortunate consequences which arose in the schools. Firstly, within each natural region further content remained at a capes and bays level, or was fitted into a systematic data handling procedure which ran from position to relief, then climate, vegetation, agriculture, mining industry, communication and finally settlement. Explanation of patterns or processes in this stereotype sequence was at root deterministic, following from the physical basis of the natural regions themselves. When time allowed teaching more than a passing glance at it, man was low down in the batting order.

The second consequence was even more unfortunate. The logic of the schema was to add order and significance to the character of any particular place by adding an intellectual understanding of its immanent properties; that is the commonality shared with other places in the same natural region, and the constituency of its existence within a global pattern. Simultaniously the rational schema required the support of data collected at climatic stations around the world, so that its canvas could be securely anchored to the ground. Data from these stations was equally available for geography classes to study as "real" examples. They could be easily presented as tables of temperature and rainfall, or more graphically in Atlases and textbooks as "climographs". For the 14/15 year old pupil, this did nothing but add a mountain of numerical data onto a perplexing set of rational/analytic and quasi-scientific procedures of the Herbertson approach. Both were dysfunctional. Public examinations at sixteen often required the candidate to work in reverse, and identify usually three natural regions from three climographs, and produce a reasoned argument for their identification using Herbertson's mode of analysis.

The Mediterranean world was paticularly exposed to this form of mental gymnastics. Unique within the world system of natural regions, rainfall and

temperature maxima occurred in opposite seasons. Thus it was considered the one "abnormal" climate which even the pupil of moderate ability should recognise and scrape at worst a pass level. With desperate intent, Geography teachers considered it vital that all students should remember that the Mediterranean could be summed up in one single thought "winter rain, summer drought". Little matter that by this ultimate reduction, pupils might come to believe that teachers of geography were obsessed with when and where it rained, and when it was cold and where it was hot. The significance of all this was left unanswered.

I call this approach to Geography teaching Classical because it is an early example of positivism in the school geography curriculum in which the rational and the empirical traditions are supposedly combined. Its frustrations and failure should have been instructive in the last decade when it was again attempted and again found to be wanting at school level. World climates were taught as given: as a rational argument it dealt only with climate as a closed system, and the heavy stress on intellectualism quickly produced a gap between the generalisation and its assimilation by the student. In the haste to cover the syllabus, the generic terms could only be taught as labels, and thus have the status of inert facts. This was then the **jaberwocky curriculum** (Hall,1978) which replicated the **meritocratic/bourgeois** model of education (Lawton,1975). Subjects are hard but ultimately amenable to comprehension once one has spent much time becoming initiated into the symbolic purposes of the form of knowledge being transmitted. Simultaneously the data scan emphasised the information-gathering tradition and the exceptionalist view of geography which in the study of climographs was part of a purposeless **gradgrind** curriculum, with it noble antecedents in the world of Dickens' Dotheby Hall, where poor Toby had to chatter out the numbered attributes of the horse at the behest of the Inspector under the 1862 Code. One hundred years later successful pupils in Grammar Schools were those who had the capacity to absorb and accept a curriculum which was inculcated from above by the University connection, reduced and compressed into its jaberwocky and gradgrind elements, transmitted passively by an inert pedagogy, and assessed by the criteria of academic scholasticism.

The impasse created by Herbertson's analytical regionalisation, where even at best man was the end term of a chain of topic headings in a set sequence, was to look directly at the major facts of the landscape in any particular region, giving more balance to the role of human and social factors. Reductionism could be avoided by giving a longer phase of coursework to real life in such areas and less to analysis and deduction of climate types. In one example, taught at the end of the nineteen fifties, a study of the Mediterranean could begin by locational stimulus questions using an Atlas, followed by an enquiry into the interconnectivity of the Mediterranean triad of wheat, olives and vines, traced against the seasonal rythm of life in central Italy, and the pattern of labour demand against the seasonal incidence of rainfall and critical growth temperatures. The climograph was introduced for an instrumental purpose: to discuss the seasonal spread of a farmer's workload in the light of the crop planting, management and harvesting. Unlike the positivist example cited earlier a two or three year plot of the climograph is required for sense to be made of seasonal changes, of agricultural practice and the inverse relationship between temperature and rainfall understood. The investigation could then spiral: the effect on diet and on employment when one, or worse two members of the triad were missing, the implications for the landless of large latifundia, the effect of irrigation and of specialism, the link between immature topography and the incidence of pasture and of transhumance.

This example anticipates the humanistic approach now gaining favour in schools in the eighties. It attempts to build up from concrete evidence, with appropriate conceptual support, an empathy and understanding of people and place, using systematic and numerical techniques where they contribute to this

end. The temper of thought is that of possibilism, developed in Britain by Unstead into a method of study in which regionalisation was synthetic rather than analytic, and where man assumed a more responsible role in a sociocultural rather than a natural environment (Biddle, 1985).

Often in the post war period (1945-70) a five year course of study covering the world, the major regions, and systematic physical geography had no time even to adopt the synthetic regionalisation method. Case studies were then reduced to a single place and a specific topic chosen as the means to control the data input and the conceptual spread. In the late fifties, the most popular school series included an admirable study of Fez (Honeybone,1958). Of course the drawback to such strictly defined studies was that enquiry into the distribution of mosques and medersas in a Morroccan city hardly conveyed a sense of the Mediterranean with unities of climate, topography and common human issues.

The mid seventies saw a substantial movement in favour of a reformed geography, generally considered to be new because it reversed the relationship between the study of concepts and the study of fact, with an emphasis on geographical generalisation, model building, and spatial analysis rather than the unique character of a particular place. I have described how there has always been a conceptual element in systematic geography, to see change in Geography as the reinterpretation of particular traditions as described by Pattison (1964) rather than a series of revolutions and the replacement of one paradigm by another (Kuhn,1962). Even so, the treatment of data aggregates by statistical methods, the use of network analysis, and the application of theoretical models (Von Thumen, Weber) to particular places found their way through a new wave of textbooks into British schools. In their series, New Ways in Geography, Cole and Beynon (1968) used the plain of Salerno to generate an excellent exercise in sampling techniques as applied to a geographical distribution. Intended for the 10 year old pupil the description of the problem is reproduced as Figure 1. The tasks are imaginatively written with the world of the child in mind: farmers will not bother to return questionnaires sent by post. It also has a practical purpose in that sampling is an economical way to obtain an accurate picture of a given population - we all appreciate the logic of a short cut or Occam's razor. A sample based on the spatial distribution of the farms is undertaken, then pupils are encouraged from Step 3 to consider other possibilities - slicing by regular steps or using a table of random numbers. So this activity introduces quite young pupils to the three main sampling methods using judgement, systematic or random procedures. It echoes Bruner's suggestion that basic concepts can be introduced at any age providing they are honestly presented in the appropriate form (Bruner,1966).

In addition to this aside on the problem of readiness, there are two other matters drawn to our attention by this Italian case study. The first has been with us for a long time, namely whether this lesson is in fact geography. Are statistical techniques helping us understand more farming problems in Central Italy, or is the area around Salerno merely a convenient vehicle by which sampling procedures can be grasped? Is this the latest version of the mathematical tradition in geography, or is the subject merely the handmaiden of some other subject's purposes? Are we learning "about" geography or "through" geography?

As an educator I do not find the appraisal of content based on such loaded questions as particularly helpful and it is certainly of little importance compared with the examination of the relation of content to the mode of the enquiry, the transactive or transmissive style of teaching and learning, and the instrumental value to the child of the experience to motivate for further study. The fact that only an ambivalent answer can be given in this case is a source of strength, not weakness. It places the activity more readily into a school curriculum which is integrated and open at the level of "contents" rather than

discipline centred and closed in its regard for other contents. This oblique reference to Bernstein's (1975) seminal writings on the classification and framing of knowledge is significant because in our Society and Schools of the Eighties the relationship between the subjects in terms of their content, their pedagogy, and their modes of evaluation has become an issue for education and educators alike.

It is a matter under discussion at a more general level than in terms of lessons in themselves, and the link between the general and specific levels has not been emphasised until recently, and then rarely in circumstances in which practising teachers can appreciate the fact. In brief, we have to ask what are geography lessons for? If we seek to go above and beyond the "vulgar" view of geography, what is the direction to take, and whose advice are we to seek?

Twenty years ago, this question never arose. In Bernstein's terminology, each "content" (lesson) was legitimated by internal reference to the norms of the subject discipline, and these norms were set, not by reference to the pupil or to explicitly formulated school aims, but by the accepted paradigm or traditions of University departments for which specialist teachers in the schools acted as brokers. Subjects were self standing, and the school curriculum was the aggregated sum of each unique component - the collection rather than the integrated code.

But in the past twenty years, the Secondary Schools have become comprehensive, a single 11 - 16 enterprise for pupils of all ability and the dual Grammar School/Secondary School structure has gone. As these reformed institutions have tried to settle down in an affluent and inflation ridden society, they have been exposed to criticism by successive governments since 1975 for not responding to the economic, social and demographic changes which have occurred since the 1944 Education Act was passed: the quickening pace of technological change, increased populist participation in a democratic way of life, the questioning of values and of institutions, and our change from a colonial world power to being but one member of the European Community. Central Government, through persistent pressure on the 103 Local Education Authorities, have required each school, both Primary and Secondary, to publish a statement of aims and to implement a policy for the curriculum which supports them (Cmnd 9469,1985).

In these changed circumstances it does not make sense to think of revising a subject merely in terms of updating its content - what I call **subject upgrading**, which in geography might be construed as the need to review the salient features of the changing world. An evaluation is needed which simultaneously reviews the geography curriculum and the teaching style (pedagogy) against the stated aims of the school. This encompasses both the ways the subject makes a special contribution to the general educational process (the membrane strength of the boundary) and the manner of its supportive or integrative contribution across the curriculum (the flow potential across the boundary). In the case of Cole and Beynon's exercise, its content and pedagogy are legitimate in terms of both the criteria of Britain in a world of change, and of the rights of children to experience their culture through an activity-led skills based curriculum. Its special contribution is to convey a real sense of place and a spatially unequal distribution of farming technology; and it supports an understanding of the importance of quantities and of handling numbers in analysing a particular cultural problem.

Of course, one does not envisage the content of every lesson to be subject to close external scrutiny, but the Inspectorate have indicated the direction of curriculum thinking in a series of "Red Books" under the title "Curriculum 11 - 16". Red Book 3 (DES, 1983) develops the thesis of a common curriculum to which all pupils, other than those with special needs, will be entitled. No subject should see itself as content based: the need is to consider "the skills,

attitudes and concepts as well as knowledge which subjects can contribute to the education of children as a whole".

There has been heavy support for the idea of a skills based curriculum, which is the natural outcome of the promotion of an activity-based learning style, and the emphasis of skills development for a flexible, innovative and technical society. Any curriculum proposal in geography needs to respond therefore to cultural pressures to be humanistic (including an involvement with attitudes and values), to include and develop the discipline of numerate as well as verbal reasoning, to consider contemporary open issues, and to employ and refine skills and techniques which have general relevance to the world of work (DES,1985).

Education in schools is therefore witnessing the final break with the academic tradition. If a study of the Mediterranean is to secure a place in the new curriculum, it must create experiences which touch the root of the human condition and involve both thought and action, limitation and challenge rather than argument over definitions of bloodless universals. The scientific dimension should be nominalist rather than essentialist, the perspective ecological rather than linear, open rather than closed, and the purposes instrumental rather than demonstrative; breeding empathy, insight and challenge to further study (Bruner,1972).

What then are the most recent textbooks making of the Mediterranean? In the mid 1970's, the most important successful secondary school resource for 14 - 16 was the **Young School Leaver Project** (Schools Council,1975). Its purpose was to design a course of study with a high graphics content with themes in geography which would help less academic adolescents understand the community and environment in which they lived in its broadest sense. There is, in one of the three principal themes, **Man Land and Leisure**, treatment of the packaged tours industry with its important Mediterranean dependence particularly to Spain, Greece, Yugoslavia and Italy, not to mention the annual flood down the Route du Soleil to Provence. In the original materials the Costa Blanca is featured with other sections on tourism in Norway and Switzerland. The resources on Spain reflect the travel brochures of the mass tourist market with photos of sunset, glorious sandy beaches at Benidorm, nightlife, shopping best buys, and the amenities of a particular three star hotel. The ideas are claimed to be climate, time/distance, the vital role of efficient transport: only under the heading of "seasonality" is there a consideration of impact locally, particularly of unemployment in low demand periods, and pressure on amenities and transport in high demand periods.

The Oxford Geography Project was, despite its misleading use of the word "Project", the most frequently praised set of three textbooks for the 11 - 14 age range in the late seventies (Rolfe,J 1979). Book II is entirely devoted to Europe. Very little is included on the Mediterranean: the focus is heavily on the north temperate lands - iron ore in Sweden, Rotterdam the port, German Railway networks, Paris as a conurbation. It is modern in its use of simulations, games, network analysis, quantitative indeces, and a study of migration patterns, but the Mediterranean has only two pages on Tourism in Languedoc, one on land reform regions of Italy, and one chapter on the Common Market as of 1980. Of Greece, Spain, Yugoslavia there is no mention.

In the same period, the Oxford University Press also published a well regarded series **"Problem Regions of Europe"** in booklet form which includes 2 from 18 titles on the Mediterranean (the Lower Rhone, Andalusia)(Scargill,1975). The emphasis of the series is on problems such as harsh environment, the contraction of agriculture and marginality, isolation, industrial decay, and urban congestion. As a series, for the 16 - 18 year old student it certainly helps geography compete with economics as a dismal science!

The Young School Leaver Project recognised that its original themes did not include many social issues which grew in importance in the Seventies, and obtained a grant to extend the Project into the area of Development Education, funded by the Overseas Development Administration (1979-82). In practice the term Development Education is elusive being interpreted by some geography authors as a study of deficit where there is a combination of poverty and lack of capital. Others tend to see Development as the opportunity for growth, and the limits to growth under any conditions whether or not the region is industrialised. In this case, the island of Gozo (Malta) is studied in one section of one book (8 in the series) in which the positive qualities are emphasised of traditional society, and the advantage of introducing materialist values through tourism is questioned (Prosser,1982). This represents a change in approach from that on the Costa Brava in the original materials with its emphasis on holidaymaker opportunity and consumerism.

Rex Beddis, ex Director of the Young School Leaver Project, has also had commissioned another successful series of the mid eighties, in which three textbooks attempt to sustain elements of descriptive geography, theoretical geography and the more recent humanistic geography for the 11 - 14 age band, under the evocative title "A Sense of Place" (Beddis,1982). With one on Britain, a second on Resources, the third considers "The Changing World" 28 pages (or 20%) of the Book is devoted to Europe: Rotterdam, Norway, Paris, the German Autobahn are featured, thus ghosting the Oxford Geography Project, although with a much greater appeal to feeling and values education. The Mediterranean features Israel (but on frontiers), The Costa Blanca, and Athens as a Heritage landscape. Each have a folio spread: at Alicante there is a reference to the disadvantages of tourism, and an extract without any comment of 100 words on the threat to rare species in the Mediterranean by mass tourism and overpopulation. The treatment of Athens with a discussion of the preservation of the Parthenon, and the importance of heritage sites "belonging not just to Greece, but to the world" reminds one of the remarks made earlier about the function of geography at the turn of the century, although the problem now is not the predation of the British Museum but of sulphur dioxide from Athen's industry.

In sum, my survey of recently published resources is dissapointing. Considering the importance of the Mediterranean as a unity which is much broader than any general climatic regimen, an organisation is needed which might support the preparation of resources to this end, just as the ODA has done for Development Education and the Council of Europe for Eurogeo. With the inclusion of Spain and Greece into the EEC, four countries in the Community have terrain, coasts and rivers here. At the turn of the eighties, the Geographical Magazine (1979) published a series of six most useful articles on the EEC amongst which Russell King, for example, examined the possible impact of the enlargement of the EEC from nine to twelve by the inclusion of Greece, Spain and Portugal.

We can ask what are the effects of their inclusion on the agriculture of the Northern members with their cooler climates, as the Mediterranean crops of fruit, wine and vegetables enter into tariff-free trade? How can the community, already in surplus butter, absorb oils yielded by olive and sunflower; or handle the wine lake? Linkages and flows showing negative and positive feedback loops could be plotted, locating areas and land use at risk. Perhaps the Magazine could be encourged to run a series on the Mediterranean Basin as a single area, unified by its sea, and one of the ten seas identified by the Stockholm Conference in 1972 as more fragile than the Oceans and menaced by human exploitation.

A plan of action to monitor the Mediterranean (PAM) was signed at Barcelona in 1975 by all the bordering states except Albania, and of particular interest are the scientific investigations on pollution (POL) and socioeconomic research on

the environment (the Blue Plan). The first phase has produced a statistical base upon which further studies can be formulated - population (change, migration, composition, distribution), the accumulation of people along the coasts in search of employment based on the tourist boom, retirement, and the demands made by these both permanently and seasonally on the food and water resources of the region, in an area with relatively poor soils and a shortage of water. The automobile is creating other serious problems in a terrain not conducive to road construction but particularly prone to toxic pollution from exhaust fumes (Grenon,1986). Figure 2 is the only illustration I have seen of an attempt made to introduce such a theme in a public examination for 18 year old students (A-level)(SUJB,1979).

It is a question I set myself and was linked to a systematic, not to a regional examination paper. It was one of a series of map analysis and interpretation questions of the stimulus/response type. It was expected that candidates aged 18+ at Advanced Level, who had specialised in Geography as only one of three electives over a two year course of study, would be able to handle network analysis in a regional spatial context intelligently. For part (a) of the question the linear character of the network, with a major axis of flow in one direction (East/West) only along the parallel of latitude, and a significant cross flow from North Africa to Southern Europe was expected. More detailed comment on the spatial arrangement of land and sea, as it affects the specific shape of the general network - the peninsular nature of Italy, Greece and the Balearics; or the dual basin nature of the Mediterranean would indicate the ability to draw general statements from the data source. Of course the flow is as politically and strategically significant as that mentioned in the opening paragraphs of this paper, but we are now far removed in time and cultural realities from that where the priority was the passage to India of the Imperial Crown. Part (b) is an attempt to encourage development of geographical thinking of students in terms of impact studies where man's economic activities and natural forces combine to produce other ecological difficulties downstream, where the cause does not suffer the effect but displaces it spatially - in this case to the tourist areas of Greece, Italy and Yugoslavia as well as North African coastlands; the local fishing and other coastal industries.

Of course this question was set inside a syllabus with positivist expectations, in that data of oil production, flow and receipt would be handled, and oil spillage and tank cleaning objective facts in the equation. The ecological impact would be construed, but values analysis was not invited. For the facts of illicit tank cleaning, or of spillage risk are themselves ecological issues which might be raised in values clarification or values analysis procedures (Fien & Slater,1981).

To date, there is little evidence of even such ideas based on the substantial work done in the United States in this area with regard to Social Studies Courses since Fenton (1966), let alone understanding the arguments of more radical writers such as Roger Lee that the dialectic between structure and human agency is "the most fundamental idea to impart through education (Boardman (Ed),1985). Therefore Figure 2 itself is an appropriate stimulus to raising questions linked with "Teaching of Geography for a Better World" than those I was permitted to ask at Advanced Level seven years ago. For here we are studying a commodity chain which links us to trans-national issues in an ecological context and opens up an opportunity to teach about the socio-economic structures and human agencies which manage them. Why is the chain of flow of energy in one direction, from the South to North, from East to West? Why should there be a flow at all - of a fossil resource? Who controls the flow, how is it that any discharging is permitted in the Mediterranean, who has the power to order a captain to clean his tanks on the negative or counter transit flow phase - is it the human agency of his capitalist owner, or the structure of international competition? Who has the right to legislate against such action

or how can a regional agency of so many nation states (the Riverains) be effective?

Current advocates of a more radical emotionally involving geography such as Huckle (Fien & Gerber,1986) might consider these questions as the significant basis for a study of the Mediterranean world today. And those concerned with the interplay with the personal and planetary dimensions of better worlds (Hicks,1985) would seek that pupils' own behaviour patterns at a personal and social level are brought into any teaching strategy in geography. I have called this the teaching of "unteachable ideas" (1982). This is the future direction of Geography and Society in a Better World, in which a study of the Mediterranean world could play a significant part.

: SAMPLING TECHNIQUES FOR THE MIDDLE SCHOOL*

Sampling

This exercise is about an area like Central Italy. The Societa per Macchine Agricole (SMA for short) sells machinery to farmers. It is making a survey of farms in different parts of the country. The survey is to find out what farmers grow and what machinery they might need.

The area on the map is a block of 100 farms. The farms are in parts of three communes (like parishes). The names of the communes and their villages are Lucco, Pera and Caserio.

The SMA has numbered the farms from 1 to 100. The first 35 farms are in Lucco (Nos 1-35). The next 30 are in Pera (Nos 36-65). The last 35 are in Caserio (Nos 66-100).

In this exercise you are going to try to find out three questions about the farms:

1. Does the farm have dairy cows (C)?
2. Does the farm grow vines (V)?
3. Does the farm have a tractor (at least one tractor) (T)?

It is not a good idea to send a letter with the questions on to all 100 farms. Some farmers would not bother to post the reply back to SMA. Some farmers cannot read very well.

So SMA is going to send a man to visit farms and ask farmers personally. He will not have time to visit every farm. He has therefore decided to visit only 20.

Exercises 1

Step 1. Mark on the map in your workpad 20 farms for the man to visit. Make sure you are getting all kinds of farm in your *sample* of 20. Do not choose only farms by the road, or only farms in one commune.

Step 2. When you have chosen your farms, turn to the table on page 95. Find each of your 20 farms in turn and count how many have *cows*, how many grow *vines*, how many have a *tractor*.

Altogether out of 100 farms, 30 farms have cows, 30 grow vines, and 40 have tractors. If you knew the total numbers, you might *expect* to have in your sample of 20 farms, 10 farms with cows, 6 with vines, and 8 with tractors, because these are the proportions you find for all the farms. What you actually *observe* by visiting the farms probably will not be exactly 10, 6 and 8.

The SMA man *does not know* what is in the table at the end of this exercise. Otherwise he would not need to carry out his sample. We have provided the table to help you to see the difficulties of sampling.

Suppose in his sample of 20 he finds that 7 farms keep cows, 8 grow vines, and 6 have tractors. What will he expect the proportions to be for the 100 farms? He will multiply each by 5 and get 35 instead of 30 for cows, 40 instead of 30 for vines, 30 instead of 40 for tractors.

How far out was your *sample*? Compare your choice of farms and your results with those of other children.

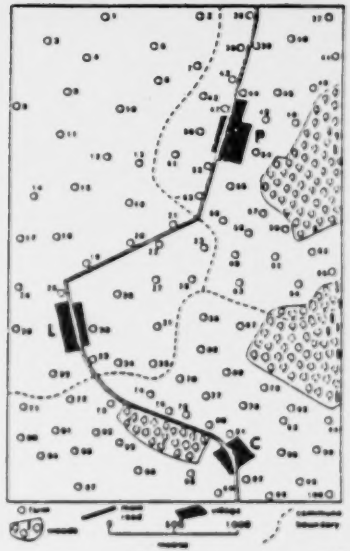
Step 3. Try two other kinds of sample. First, start with farm 1, then go to 6, 11, 16, 21 and so on to 96.

Then choose just as you fancy any 20 different numbers between (and including) 1 to 100.

You can get these numbers from the special table of random numbers provided in the workpad. You may start anywhere in the table. Do not use the same number twice if it turns up again when you take your twenty.

*Reproduced from Cole and Boynton, *New Ways in Geography*, (Blackwell), Book 3(B).

Figure 1 Sampling in Central Italy.



LUCCO	C	V	T
1	1	0	0
2	1	0	0
3	1	0	0
4	1	0	0
5	1	0	0
6	1	0	0
7	1	0	0
8	1	0	0
9	1	0	0
10	1	0	0
11	1	0	0
12	1	0	0
13	1	0	0
14	0	0	0
15	1	0	0
16	1	0	0
17	0	0	0
18	0	0	0
19	1	0	0
20	1	0	0
21	1	0	0
22	1	0	0
23	1	0	0
24	1	0	0
25	0	0	0
26	1	0	0
27	1	0	0
28	1	0	0
29	0	0	0
30	1	0	0
31	1	0	0
32	0	0	0
33	1	0	0
34	1	0	0
35	1	0	0

PERA	C	V	T
36	0	0	0
37	0	0	0
38	0	0	0
39	0	0	0
40	0	0	0
41	0	0	0
42	0	0	0
43	0	0	0
44	0	0	0
45	0	0	0
46	0	0	0
47	0	0	0
48	0	0	0
49	0	0	0
50	0	0	0
51	1	0	1
52	0	0	0
53	0	0	0
54	0	0	0
55	1	0	0
56	0	0	0
57	0	1	0
58	0	1	0
59	0	1	0
60	0	1	0
61	1	0	0
62	0	1	0
63	1	0	0
64	1	0	0
65	0	1	0

CASERIO	C	V	T
66	1	1	0
67	0	1	0
68	1	0	1
69	1	0	1
70	0	0	1
71	0	0	1
72	0	0	1
73	0	0	0
74	0	0	0
75	0	0	0
76	0	0	0
77	0	0	0
78	1	0	0
79	0	0	0
80	0	0	0
81	0	0	0
82	0	0	0
83	0	0	0
84	0	1	0
85	0	1	0
86	0	0	0
87	1	1	0
88	0	0	0
89	0	0	0
90	0	0	0
91	0	0	0
92	0	0	0
93	1	1	0
94	0	0	0
95	1	1	0
96	0	0	0
97	1	1	0
98	0	0	0
99	1	1	0
100	1	0	1

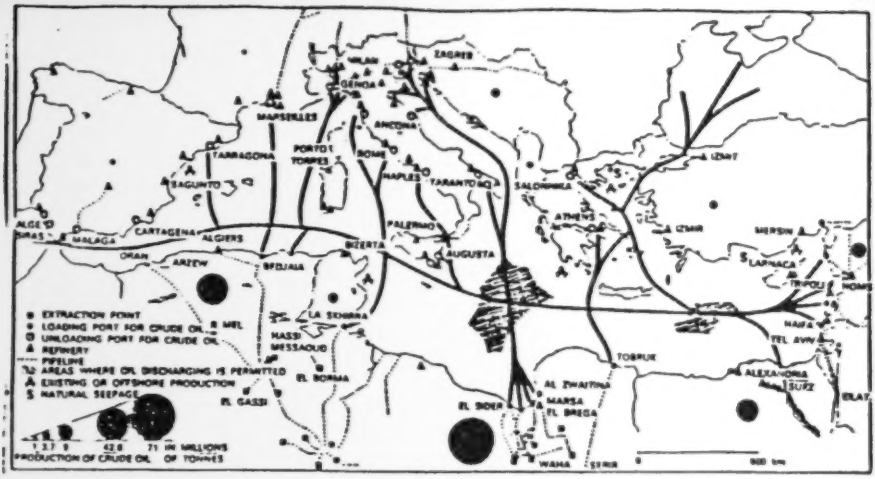


Figure 3(*a*) Production and transport of oil in the Mediterranean Sea.

Adapted from *La Basse Méditerranée* (UNEP, 1977).

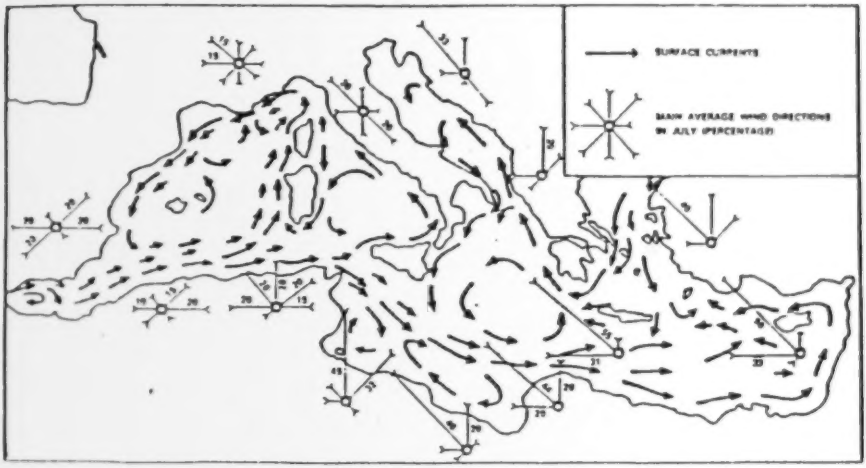


Figure 3(*b*) Surface currents and main winds in the Mediterranean in summer.

Figure 2

Question for Advanced Level Geography (18+ age)

(Southern Universities Examination Board, 1979.)

(*a*) Describe the major oil movements in the Mediterranean Basin shown in Figure 3(*a*), explaining the direction of flow and commenting upon the particular shape of the network.

(*b*) Using this description and the data on currents and winds given in Figure 3(*b*), indicate the areas of high pollution risk from spillage or uncontrolled tank cleaning, and identify those coastal sections where and for what reasons there would be major repercussions on the national economy of the affected countries.

References

Beddis R.	A Sense of Place Book 3 - The Changing World	Oxford University Press (1982)
Bernstein B.	Class, Codes and Control Vol 3.5	Routledge & Kegan Paul (1975)
Biddle D.S.	Paradigms & Geography Curricula (1882 - 1972) in Boardman, D. (Ed) New Directions in Geographical Education	Falmer Press (1985)
Boardman D. (Ed)	New Directions in Geographical Education	Falmer Press (1985)
Bruner J.S.	Towards a Theory of Instruction	Belknap (1966)
Bruner J.S.	The Relevance of Education	Allen & Unwin (1972)
Cmnd 9469	Better Schools	HMSO (1985)
Cole & Beynon	New Ways in Geography Book 2	Blackwell 2nd Edition (1968)
DES	Curriculum 11-16: A statement of Entitlement	HMSO (1983)
DES	Curriculum Matter No. 2	HMSO (1985)
Fenton E.	Teaching the New Social Studies in Secondary Schools	Holt Reinhart (1966)
Fien J. & Slater F.	Geographical Education Vol. 4	(1981)
Fien J. & Gerber R(Ed)	Teaching Geography for a Better World	Jacaranda Press (1986)
Geographical Magazine	The EEC Equation	Jan - June (1979)
Grenon M.	Prospective Mediterranneanne Revue de l'Association des Historiens et Geographies No. 308 (March '86)	Busson (Paris 1986)
Hall D.B.	in Weigand & Orrell (Ed) New Leads in Geographical Education	Geographical Association (1982)
Hall D.B.	Geography and the Geography Teacher	Allen & Unwin (1978)
Hall D.B.	World Studies - their place and Emphasis	Times Education Suppl. (3 Dec '82)
Herbertson	The Major Natural Regions	Geographical Journal 25 (1905)
Hicks D. & Fisher S.	World Studies 8 - 13 Handbook	Oliver & Boyd (1985)

Honeybone R. (Ed)	Geography for Schools Vol II The Southern Continents	Heinemann (1958)
Kuhn T.S.	The Structure of Scientific Revolutions	Chicago Press (1962)
Lawton D.	Class,Culture and the Curriculum	Routledge & Kegan Paul (1975)
Maclure J.S.	Educational Documents 1816-67 (156)	Methuen (1965)
Magee B.	Popper	Fontana (1973)
Pattison W.D.	The Four Traditions of Geography	Journal of Geography 63 (1964)
Prosser R.	Tourism	Nelson (1982) for Schools Council
Rolfe J. et al	Oxford Geography Project Book 2 European Patterns	Oxford University Press 2nd Ed. (1979)
Seargill I. (Ed)	Problem Regions of Europe (Series)	Oxford University Press (1975)
Schools Council	Geography for the Young School Leaver Project	Nelson (1975)

Helmut Schrettenbrunner,
University of Nuremberg,
W-Germany

Research Perspectives for the Empirical Didactics of Geography

Abstract

The often deplored low and deficient standard of research in the field of didactics of Geography is mainly due to a general disorientation with regard to theory, a lack of precise definitions and an insufficient command of empirical methods. The paper tries to structure theories relevant to our research aims, and pleads for strong restrictions in future research objectives. It also suggests an international clearing board within the IGU to guarantee the appropriate quality of major research work (dissertations).

1. The present level of research work

This paper is not going into detail with an analysis of the shortcomings of most of the research work done in our field. Some major defects could be detected:

1. A nearly unlimited range of aims, themes and approaches, i.e.

the total variety of subject matters reflecting education. It will be suggested that this range should be considerably limited.

2. A non-existing or haphazard use of theories with the subjective excuse that the researcher could not find a general theory of education and so might as well produce some sort of private theory himself. It will be suggested that a structured set of macrotheories can help out of the maze, and again that concentration on a few fields is recommendable.

3. Deficiencies in the definition of terms and in the formulation of hypotheses, very common until now because of the unlimited range mentioned above, make solid empirical work impossible: independent variables remain vague and sometimes also change position with dependent variables. It will be suggested that a multi-step procedure of operationalisation should be applied.

4 Lack of appropriate data processing or misuse of statistical methods has been the result of the above mentioned deficiencies, which lead the researcher to ask at the end how he could polish his data with elegant statistical methods. It will be suggested that statistical methods should be considered not as a final embellishment but as necessities of theoretical considerations taken at the beginning of the research work.

2: Macrotheories for a theory of teaching

Teaching theories suffer from common inadequacies: they deal with diverging aspects, treat different problems and are located at different levels. Our researcher is left alone in his choice of theories, and whichever he chooses it will not be comparable to others, so that his results will remain unique pieces in an imaginary mosaic which can never be completed because other research pieces will be found on other levels of abstraction or

under different perspectives.

"This situation could be perceived as discouraging if one looked for one theory of teaching that would be adequate for all instructional problems. Alternatively, it could be seen as reflecting the fact that these various attempts are more or less useful for different purposes, so that each of them possibly has its appropriate place in a larger frame of reference. Such a frame of reference can be provided by an all-encompassing theory of teaching if it is conceived as a hierarchical theory (fig.1).

The subtheories may differ with respect to (a) their levels of generality, (b) the purposes they are developed for, or (c) both aspects. Moreover, the lower a subtheory is located in the hierarchy, the closer it is to reality and research.

A hierarchical conception of a theory of teaching is advantageous in some respects: it enables one to integrate the various so far unrelated theories into a comprehensive pattern that reflects the different relationships between them. Moreover, the system as a whole need not be altered if a particular subtheory fails to be successful (Klauer 1985, p. 67)."

Klauer suggests a unifying theory of teaching which he presents on a two-dimensional table, one dimension standing for the types of scientific study, and the other for the type of question that the theory should be able to answer. He thereby makes three distinctions: descriptive, prescriptive and normative type of research. Educational psychology and empirical- analytical research on teaching are good examples for the description as

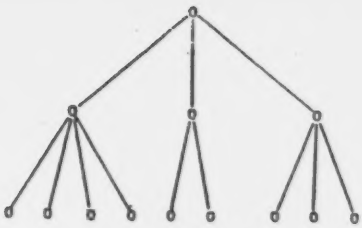


Figure 1. Formal structure of a theory of teaching

		Type of study			
		Descriptive	Prescriptive	Normative	
Type of question	What?	A Objectives/ subject matter in classroom	B Curriculum	C Ultimate ends	Theory of teaching objectives
	How?	D Teacher-student interactions	E Teaching methods	F Professional ethical standards	Theory of teaching methods
		Educational psychology (Teaching research)	Educational technology or science of teaching (design)	Philosophy of education	

Figure 2. Two, three, or six macrotheories for a theory of teaching

(fig. 1 and 2 from Klauer 1985, p 6 and 7)

well as the explanation of a section of reality. Normative studies deal with ultimate goals or general objectives and ethical standards, and should be considered under the label of philosophy of education. The prescriptive type of science researches normatively established objectives with empirical analytical methods, thus forming a technology to solve problems of importance in practical school life.

"Corresponding to these distinctions, the theory of teaching can be conceived as consisting of two, three or six first-order subtheories or macrotheories (fig. 2). The six cells depicted in the matrix need some comment.

The discipline of Cell A is not yet well established. It is concerned with empirical research in objectives found in teaching processes. Disclosing the hidden curriculum, analysing the content of a lecture, estimating the rate of repetition of a grammatical rule or uncovering the flow of a piece of information in a lesson would be examples of research projects belonging to such a discipline. Cell B is concerned with curriculum theory. This discipline answers the question of what to teach, given that an ultimate goal has previously been established. The decision-making about such an ultimate end is achieved through the normative study of Cell C.

Researchers have paid much attention to Cells D and . The descriptive research in teacher-student interactions has been carried out not only by observational studies (Rosenshine & Furst, 1973) but also by a large number of experimental investigations (Dunkin & Biddle, 1974). The prescriptive study of teaching methods is precisely the type of research that Gage

(1978) postulates because of its importance for improving educational practice. Finally, Cell F contains a normative discipline which is concerned with professional ethical standards for teachers (Klauer 1985, p.7)."

If we come to draw our conclusions for the didactic research in Geography we can delete the normative type (philosophy) of reseach because it does not use empirical methods. The remaining four cells may be considered to fit empirical needs, with a prevalence on the theory of teaching methods.

Suggestion 1:

Further research should center

1) mostly around teacher-student interactions and teaching methods in Geography (theory of teaching methods, cells D and E),

2) partly on curriculum theory (cell B),

and not

3) around the philosophy of education (cells C and F).

Cell A which is not yet well established has been omitted.

These restrictions, hopefully, will exclude firstly all wide-angle and all-purpose efforts which admittedly have a reason in the prevailing practical needs but cannot deal with the complex problems in a scientific way; and secondly, all mixture types of research across two or more cells.

Further papers should examine the existing theories of teaching methods and give suggestions which to use and how to use them properly.

- How profound should theory be?

If we take into consideration the results of empirical research in the didactics of Geography we have to state that only a limited number of independent variables has been taken into account, such as age, grade, gender, marks, attitudes, IQ, performance in school and little more.

This is partly due to the fact that these variables are at hand without greater problems (apart from IQ or attitudes) and also that we have never thought about an appropriate set of independent variables for our aims. If we try to explain, for example, the results in programmed instruction with the above-mentioned variables, we are disappointed that less than 30% of the variance can be explained statistically. This should be evidence enough to realize that our theoretical basis (expressed through the type of independent variables) is not profound enough to explain such a complex process as the learning with a programme.

Other research which has taken into account a number of more complex characteristics (pupil's aptitude for guided work, pupil's willingness, expectation of success, fear of failure, power of concentration, motivation for speed, measured by test batteries, s. Rollett 1978) thus describing in a different form pupils' learning characteristics, can explain more of the variance (46%), because its theoretical background is of a different type and can therefore claim to be more valid.

Let us consider, however, that the above-named more complex pupils' characteristics are typical for a different science, i e.

for educational psychology and not for the didactics of Geography. Our research aim is not so much the inner structure of a pupil, and if we are not to tangle with other research domains but are still interested in the psychological, theoretical explanation of the effects of Geography teaching, then we should aim at joint research ventures, thus combining a psychological theory of learning with methods in or effects of Geography teaching or learning. The solution should therefore be, if we strive for more complex theoretical explanation, to seek cooperation with neighbouring sciences and not to trespass on unknown grounds.

Suggestion 2:

Interdisciplinary cooperation must be sought if we want to widen the theoretical explanations of more complex relationships in Geography teaching, or if we want to explain more about teachers' or pupils' behavior. Thereby we can include (with the cooperation of a colleague of a neighbouring science) either another set of independent variables (not typical for the didactics of Geography, such as personality variables) or another range of methods (such as Thematic Apperception Test, physiological reaction tests etc.)

In cases other than interdisciplinary cooperation a very strict adherence to a much narrower theoretical basis should be followed, as will be shown in the next chapter.

4. The design of experimental research

It could already be shown that the concept of representativity, so far accepted by our Commission (e.g. How do Danish pupils value other nations?), is wrong and has led to a number of meaningless publications.

It has equally been suggested that experimental research design should be applied instead, where R stands for the amount of reaction (dependent variable) which a person P shows when confronted with a number of stimuli S (independent variable). This mapping sentence can then be written:

P S ---> R

We have to keep in mind the different types of operational definitions for the variables, which generally means for the dependent variable a set of definitions concerning measurements (number of seconds, sum of raw points, degree of attitude etc), whereas the independent variables are normally defined by prescriptions regarding the construction of the experiment (intensity of training, teacher experience yes/no, methods A/B etc). Nussbaum (1985, p. 64)) points out that precise definitions are most important and shows how the use of the so-called facet design can be helpful.

"For a more detailed definition of our three variables P, S, R we introduce the so-called facets in the mapping sentence, which

substructure our variables and give them a new order. The question of which facets shall be accepted within the mapping sentence is ultimately the researcher's decision, because we are dealing with definitions... This method will now be demonstrated with one example drawing on the variable 'degree of tutoring by the teacher' (Nussbaum 1985, p. 65)."

Persons P will now be defined as pupils B with three different levels of learner's preconditions (s. fig. 3). Facets A C D E specify stimuli S, facet A indicating over which range our variable 'degree of tutoring' shall be varied. 'A' is given on a continuous scale ranging from a very low to a very high degree of tutoring. In empirical research there should be a minimum of three experimental conditions which should be placed on points lying far away on this continuous scale to guarantee the eventual proof of non-linear effects on the dependent variable.

Facet C distinguishes only roughly between two types of information (content, learning aids). Facet D structures the content of learning by applying a similar concept in cognitive psychology. Facet E distinguishes 'work alone' from 'work in groups' because we can suppose that missing tutoring on the

teacher's side can be compensated only by higher learning activities on the pupil's side Facets F and G give intensities and different types of effects

If we now combine all possible facets (apart from A and F) we receive the following amount of structuples:

	P	S	R
1.	b1	c1 d1 e1	g1
2.	b2	c1 d1 e1	g1
.			
.			
.			
240	b3	c2 d4 e2	g5

"Each of these structuples represents a formalised definition of our independent variable S including a specification of our group of pupils P and the dependent R. The first structuple b1c1d1e1g1 could therefore be read as follows:

The (low/high) intensity with which a teacher tutors his pupils, who have learning prerequisites above average, during their content learning of concepts (termini) in individual work results in (very low/very high) immediate learning effects of these pupils.

Altogether we can use the mapping sentence as a system for definitions and extract a sum of 240 (=3*2*4*2*5) sentences of this kind, which in their turn contain one definition after another of the structure under investigation "(Nussbaum 1985, p. 68-69).

This example, which was drawn from Nussbaum's paper, should help us to visualise more vividly in which direction and by which means we must go. We have some similar approaches (Heilig 1982, Haubrich quoting Heilig) and should be able to come to a narrower and at the same time to a more specific concept of what our independent variables within the didactics of Geography should be. Experimental research without this overall definition of our field of interest is not feasible.

Suggestion 3:

We should strictly adhere to the pledge to define our terms in a correct way and to define our variables in an operational way which can elucidate the amount of hypotheses within an experiment. We should also come to a conclusion with the commission on how to define the range of our research work by listing the relevant independent variables.

It should be remembered that statistical methods which are not being treated in this paper do not have a value of their own, but fit adequately the chosen research design.

5. Further procedures

Further research was insinuated in the three suggestions:

- survey of existing theories of teaching methods,
- subject matters for interdisciplinary research,
- definition of our independent variables and a projective point of view of future research.

Furthermore we should take into consideration a 'clearing board consisting of the commission's chairman and some other members who must be willing to act in the international field and give guidance to those who are willing to work within this limited experimental research work. The standard of dissertations should not be allowed to disregard internationally acknowledged levels of quality. The clearing committee could express positive appraisal of a dissertation in an English foreword signed by the chairman.

The clearing committee itself should seek research connections with neighbouring sciences and could thereby find support and control from outside.

It is evident that these guidelines mean an enormous amount of restriction for the individual researcher, but they were written with the conviction that the time of wandering over colorful meadows, regarding flowers here and butterflies there, turning from one direction to another should now be over. A fence for future activities will certainly be helpful.

Literature

Dunkin M.J., & Biddle B.J., The Study of Teaching, 1974

Gage N.L., The Scientific Basis of the Art of Teaching, in: Teachers College Press, New York 1978

Graves N.J., Research and Research Methods in Geographical Education, London 1984

Haubrich H., Research Methods in Evaluating the Use of Media in the Teaching of Geography, in: Graves 1984, p. 119-142

Heilig G., Schülereinstellungen zum Fach Erdkunde, Dissertation TU Munich 1982

Klauer K.J., Framework for a Theory of Teaching, in: Teaching and Teacher Education, vol.1, no 1., London 1985, p. 5-17

Nussbaum A., Entdeckendes Lernen: Probleme der Forschung und mögliche Lösungen, in: Zeitschrift f. Entwicklungspsychol. u. Päd. Psychol., 1984, Bd. XVI, H. 1, P. 57-76

Rollett B., Lernpsychologische Untersuchungen als Grundlage geographiedidaktischer Planungen, in: H.Schrettenbrunner (ed.), Quantitative Didaktik der Geographie, Teil II, Der Erdkundeunterricht H.28, 1978, p.39-55

Rosenshine B., & Furst N.F., The Use of Direct Observation to Study Teaching, in: R.M.W. Travers (ed.), Second Handbook of Research on Teaching, Chicago: Rand McNally 1973, p. 122-183

Schrettenbrunner H., Empirical Methods for Researching Media - a Challenge for more Awareness of Methodology, in: H. Haubrich (ed.), Perception of People and Places Through Media, 25th International Geographical Congress, Freiburg 1984, p. 489-499

GIFTED CHILDREN AND THEIR DEVELOPMENT OF UNDERSTANDING MAPS

by

Dr Rod Gerber

Paper presented to the Regional Conference of the International Geographical Union, Sitges, Spain, August 25-28, 1986.

INTRODUCTION

As geography teachers, we regularly encounter students who are different from others in our classes because they can think about geographical issues more deeply and they can reason more thoroughly to solve a geographical problem. These students often introduce a creative approach to solving a housing or a food problem. They do not accept a conventional viewpoint in studying an issue such as the relocation of a city zoo. Sometimes, they can be disruptive in class because their "unusual" views tend to distract other students. Because they are different, these students are often not the focus of the teacher's attention and their abilities are not challenged enough in most geography classes.

Many attempts and studies have been made to define these gifted children. As expected, these studies have produced a wide variety of criteria for defining giftedness in children. These include Terman's focus on intelligence derived from a standardised test (Terman, 1926), Henry's emphasis on "consistently remarkable performance" (Henry, 1958), Ogilvie's focus on outstanding performance in "either a general or specific ability in a relatively broad or narrow field of endeavour" (Ogilvie, 1973) and De Haan and Harighurst's emphasis on "unusual promise in some socially useful area" (De Haan and Havighurst, 1961). More recent attempts to define giftedness have recognised that it is characterised by a combination of criteria. Therefore, Marland (1971), Department of Education and Science (1977), Kerry (1978), Daniels (1983), Director General's Committee (1983) and Povey (1980) have emphasised high performance in some of these areas: general intellectual ability, creative thinking, the visual and the performing arts, psychomotor ability, leadership qualities and specific academic aptitude over their years of growth.

By what means can gifted students be identified in geography classes? Clarke (1983) has synthesised the range of techniques which geography teachers can use to pinpoint these students. These include:

1. A variety of tests including standardised instruments which can be used to compare individual students to the "norm"; criterion-referenced tests to measure the attainment of skills, concepts and abilities in geography and teacher-made attainment tests which can be used to provide feedback to the teacher on the student's performance having completed some studies in geography.
2. Teacher nomination based on the geography teacher's: observation of students going about their work, listening to students' conversa-

tions to understand their reasoning, discussing problems with the students to ascertain their thinking and general talking with these students.

3. Parental and peer nomination obtained through tactful questioning by parents and through the administration of class-based questionnaires seeking information from students about their peers.
4. Nomination by an 'expert' who observes the student's personal performances.

These techniques and definitions are useful in pinpointing those students who fit the general category of gifted students. However, there is a definite inference that students are not gifted in all of their endeavours. Students may be gifted musically, but not gifted mathematically. Studies in geography focus, among other things, on being able to think logically about spatial and environmental relationships and being able to communicate efficiently by graphic means. Therefore, it is reasonable to expect gifted geography students to be consistent high performers in these regards. One could also expect these students to be able to offer creative solutions to social and environmental problems which they encounter in their studies.

A variety of studies have been conducted to investigate students' development to think and reason in geography, as well as their ability to communicate graphically. These studies highlight some of the attributes which gifted geography students possess. Heamon (1973), Rhys (1972) and Stringer (1981) focussed on students' ability to reason in geography. They deduced that this ability involved students in synthesising a number of relevant items of geographical information to form a logically-reasoned response. Generally, this ability was not developed by students until middle adolescence. A similar conclusion was established in studies across the secondary curriculum in Australia by Collis and Biggs in the development of their SOLO taxonomy (Collis and Biggs, 1979). Studies by the author (Gerber, 1980; Gerber, 1981a; Gerber, 1981b; Gerber, 1982; Gerber, 1984a; Gerber 1984b; Gerber, 1985) have shown that students' development of competence in cartographic communication does not occur evenly for all elements of maps and that it too usually does not occur until middle adolescence. Students who consistently display competence in geographical reasoning and graphic communication at younger ages are ones which may be targetted as potentially gifted students in geography.

CASE STUDY

This study endeavours to investigate how two young students who can be identified as gifted are able to understand maps. Their understanding of maps is gauged by their ability to define maps, their perceptions of information presented on different atlas maps, their ability to derive meaning from maps and their ability to search for information on maps. Evidence of development was obtained by giving both boys the same instruments at twelve month intervals. A synthesis of these investigations may provide some implications for promoting the understanding of maps with younger gifted students.

The Students

Gregory and Edward were seven years of age when they started in this study. Like most curious seven-year olds they had a diverse range of interests which revolved around playing: board, card and computer games; sports such as tennis, cricket and swimming; drawing animals and machines; building models and using Lego blocks; playing with toys such as trains and remote-controlled cars; going on travelling holidays and talking to people. In short, they are young, active children. They have a curiosity about how things work and regularly ask questions to this effect. This curiosity is coupled with a keen competence in place location. For example, Gregory knows all of the countries of the world, each capital city and each flag. He updates this information as changes occur around the world. Edward's place knowledge is very well-developed as well, largely because his family emigrated from England to Australia and he is keen to use maps to locate different places around the world.

The giftedness of the boys was confirmed at age eight years using a structured intelligence profile which covered the areas of reading ability, mathematics ability and general intelligence. Each of these three areas contained thirteen divisions. Both boys scored at the gifted level for the majority of these divisions.

Students' Spatial and Mapping Abilities

Their personal attributes associated with geography in general and mapping in particular were investigated at age seven years and then repeated at age eight years. Specifically, they were asked to give their preferences and dislikes in maps and they were tested for their spatial ability, map-reading ability and their map-reasoning ability using standardised tests. The results of these investigations

are summarised below.

The students' preferences and dislikes in maps were established by asking them which map they liked and why they liked it. Similarly, they were asked to nominate the map they disliked and why they disliked it. Their responses at the two time intervals are summarised in Table 1. They reveal that the students prefer maps which provide relevant information, e.g. a road map to be used when the family goes on a holiday or a map of one's homeland. They dislike any maps which do not provide accurate information which can be read easily. The responses of these students are quite comprehensive for young students and reveal their ability to reason geographically at a level beyond their chronological age. Their eye for detail starts to emerge in their reasons for liking and disliking particular kinds of maps.

Table 1. Students' Preferences in Maps

Criteria of Maps	Gregory		Edward	
	1984	1985	1984	1985
A map that I like.	Australian Road Map.	Population Map.	Large road map of England.	Map of England.
Reason.	Lots of places; time; rainfall; landforms.	You can tell how many people there are.	Places where I lived; ferry boat routes.	It's where I came from and its interesting.
A map that is hard to read.	Road map of Melbourne.	Sea maps.	Political Map of the World.	Old-fashioned English map.
Reason.	Too many names of suburbs; landforms and roads are too dark	With some maps you find islands that are not named.	Difficult names; too much information; hard to find places.	It has very hard markings on it.

The first of the three standardised tests used to measure the students' ability with maps is the Iowa Test of Basic Skills - Wl (Map Reading). This test, prepared for nine-year olds, analyses students' ability to determine direction, locate and/or describe places, determine distances on maps, determine routes of travel and asks students to visualise landscapes. The students' scores for their two attempts

are summarised as percentages in Table 2. Percentages have been used because the American norms may be inappropriate for Australian conditions. The results indicate that as seven-year olds in 1984 the students performed quite well and that one year later they exhibited very high levels of achievement on a test for nine-year old students.

Table 2. Students' Map-Reading Ability (%)

Student	Iowa Test W-1 (Level 9)	
	1984	1985
Gregory	77.8	85.2
Edward	66.7	85.2

The students' results on this test were analysed further on the basis of discrete mapping skills to establish: the areas where the students had demonstrated competence; those where competence was developed over the one-year period; and the areas where the students lacked competence. These results are summarised in Table 3. They indicate that by age seven years both the students were competent in the determination of direction and that one was competent in either locating and describing places or in determining distances. Inconsistent or

Table 3. Students' Achievements of Map-Reading Skills on Iowa Map-Reading Test

Map-Reading Skills	Gregory		Edward	
	1984	1985	1984	1985
1. Determination of direction	Yes	Yes	Yes	Yes
2. Location and/or description of places	Yes	Yes	Some	Yes
3. Determination of distances	Some	Yes	Yes	Yes
4. Determination of routes of travel	Some	Some	Some	Some
5. Visualisation of landscape	No	Some	No	Some

Yes = Competence Some = Developing Competence No = Incompetence

developing responses were evident in the ability to determine routes of travel. Lack of competence was evident in visualisation of landscapes. After a year, the pattern of competence changed considerably. By eight years of age the students were competent in determining directions and distances on maps and could locate and describe places accurately. Also, developing responses for determining routes of travel and for visualising landscapes were evident. These students possessed a good map-reading ability by the time they were eight-years old.

The Space Test from the Mathematical Aptitude Profile Series (A.C.E.R., 1978a) was used to establish the spatial ability of the students. Level 1, the lowest level in the series of four tests, was used for this purpose. Scores on these tests are standardised using the Rasch method into standard units termed brytes. The students' scores are summarised in Table 4. These scores indicate that both students had quite well-developed spatial abilities by the time they were eight years old. The mean spatial ability for this test for seven year old students has been calculated at 29 brytes and 37 brytes for eight year olds. These students displayed spatial abilities of fourteen year old students (A.C.E.R., 1978b; 21).

Table 4. Students' Spatial Ability (Brytes)

Student	A.C.E.R. Space Test (Level 1)	
	1984	1985
Gregory	46	53
Edward	51	54

This test of spatial ability analyses four clusters of spatial concepts/abilities: basic concepts, topology and perception; location, distance and angular relations; properties and relations of solids and shapes; and spatial transformations. The accuracy of the students' responses is summarised in Table 5. They indicate that at seven years of age one student was unable to handle the properties and relations of solids and shapes, but that both students had a fair degree of mastery over the remaining clusters of concepts. By age eight years, both students had improved their spatial ability considerably and showed that they were both very competent in spatial concepts and abilities - well in advance of other students of that age.

Table 5. Students' Achievement of Spatial Concepts/Abilities (Percentage of Correct Responses)

Spatial Concepts/ Abilities	Gregory		Edward	
	1984	1985	1984	1985
1. Basic Concepts, Topology and Perception	50.0	70.0	70.0	80.0
2. Location, Distance, Angular Relations	57.1	100.0	71.4	71.4
3. Properties and Relations of Solids and Shapes	11.1	66.7	66.7	77.8
4. Spatial Trans-formations	60.0	80.0	80.0	100.0

The test of the students' map-reasoning ability consisted of that developed by Feldman and Salomon (1969) in which students exhibited their reasoning in response to questions about a map of a hypothetical island. The responses to these questions were constructed to correspond to each of the four levels of Piaget's developmental sequence for spatial ability. The students' map-reasoning level is determined by calculating the mean score of their responses to the questions in the text. The maximum mean score of 4 indicates that the student has an excellent level of map-reasoning whereas a minimum score of 1 indicates a poor map-reasoning ability. The students' results of map-reasoning are summarised in Table 6. They indicate that by age seven the students were at the concrete map-reasoning level (the second highest level). By age eight years the students were verging on having an abstract level of map-reasoning (the highest level). There is little doubt that the students at age eight possessed an ability to reason from maps which was in advance of their years.

Table 6. Students' Map-Reasoning Abilities (Mean Scores)

Student	1984	1985
Gregory	2.82	3.35
Edward	3.06	3.41

This map-reasoning test focussed on three clusters of abilities - identification of signs; analyses of distance, direction, heights and symbols; and interpretation, inferencing and hypothesising from maps. The students' responses to each of these three clusters of ability across the two years are summarised in Table 7. These results indicate that at age seven years the students could identify signs best, but were quite sound at analysis, interpretation, inferencing and hypothesising. By age eight years, both students had improved their abilities in these latter two clusters and were only marginally weaker than for their ability to identify map signs. The test authors indicate that these clusters of ability are arranged from the easiest, i.e. identification of signs, to the most complex, i.e. interpretation, inferencing and hypothesising. Both students have displayed exceptional ability in inferencing and hypothesising for their age.

Table 7. Analysis of Students' Map-Reasoning Abilities
(Mean Scores)

Map-Reasoning Ability	Gregory		Edward	
	1984	1985	1984	1985
1. Identification of signs	3.5	3.5	3.5	3.5
2. Analyses of distance, direction, heights and symbols	2.6	3.2	2.8	3.4
3. Interpretation, inferencing, hypothesising	2.6	3.4	3.0	3.5

Overall, it can be concluded that the two students in this study posses outstanding spatial and mapping ability for their age. They are capable of doing aspects of reasoning normally expected of older students. Therefore, to be challenged in geographical studies, they require quite different learning experiences that teachers would normally provide.

Students' Perception of Information on Maps

How students may perceive information on maps may or may not be similar to the meaning that they derive from maps. It is quite possible

to confuse map users' perceptions of cartographic information with their understanding of this information. Therefore, in this study the two have been deliberately separated to avoid any such confusion.

The means by which students' perceptions were ascertained were their reactions to selected maps in two atlases currently used in Australian schools - Atlas 1 for upper primary students and Atlas 2 for lower secondary students. Where possible, comparable maps from both atlases were used with the students. The results of the students' responses are summarised in Tables 8 - 11. Tables 8 and 9 indicate the students' perceptions of landforms on two relief maps of Australia - this was a hill-shaded map for Atlas 1 and a layer-coloured map for Atlas 2. The breadth of the students' perceptions was evident for their perception of landforms on both maps. In fact, there was no discernible change in the students' perceptions across the two years of the study. Their breadth of perception is evident in their consistent identification of a variety of landforms - mountains, rivers, lakes, reefs, deserts and islands. This indicates quite well-developed powers of observation by age seven years for both students.

Table 8. Students' Perception of Landforms in Australia (Atlas 1)

Year	Gregory's Responses	Edward's Responses
1984	Brown mountains from above, yellow lowland, no towns.	A lot of highland in the east, a number of lakes, mainly lowland in the middle, rivers mainly flow to the sea, few places named.
1985	Mountains are shaded; capes, deserts, lakes, reef and islands.	Dark brown mountains, deserts, coastal features, lakes, rivers, reefs.

Table 9. Students' Perception of Landforms in Australia (Atlas 2)

Year	Gregory's Responses	Edward's Responses
1984	Dots for mountains; dark shading; names; lakes, rivers, yellowish desert.	Mountains in dark shading; yellow colour for deserts; few places; lots of desert.
1985	Dark shading for mountains; desert, lakes, rivers, dots for mountains, reefs.	Mountain heights, capes, lakes, deserts, reefs.

The students' perception of transport was analysed from a transport map of Australia containing many large pictorial signs of different forms of transport. Again, the students perceived the range of transport and main routes throughout Australia by age seven years, although there was evidence that by age eight years, instead of perceiving discrete forms of transport, the students are starting to generalise about the information (see Table 10). This hints of the advanced reasoning capabilities of the students.

Table 10. Students' Perception of Transport Map of Australia (Atlas 1)

Year	Gregory's Responses	Edward's Responses
1984	Railways, highways, airports, seaports.	Roads, railways, airports, seaports, goods being moved.
1985	Forms of transport, ships, planes.	Special transport routes, ports, airports, roads.

Finally, the students were asked to indicate how the maps in Atlas 1 (for upper primary students) differed from those in Atlas 2 (for lower secondary students). The results of these observations are summarised in Table 11. The different amounts of cartographic information; the greater density of place names on Atlas 2 maps; the simplified marginal signs, e.g. keys, and the less sophisticated use of colour on Atlas 1 maps were noted by the students. These more able students gave the impression that they prefer the Atlas 2 maps which contain more information, even though these maps have been designed for middle adolescent students.

Table 11. Students' Perception of Differences between Maps in Atlas 1 and Atlas 2

Gregory's Responses		Edward's Responses	
Atlas 1	Atlas 2	Atlas 1	Atlas 2
No big range of colours. No population key. Less difficult information. Fewer places.	More information More places. Easier to read.	No latitude and longitude. Smaller Keys. Less information. Less difficult information.	Better marking of borders. More complicated information.

Overall, the students exhibited quite acute perceptions of cartographic information presented on maps containing both pictorial and semi-abstract signs. Their ability to identify a breadth of information from these maps is notable and beyond the normal expectations for seven and eight year old students.

Students' Ability to Derive Meaning from Maps

Students' ability to derive meaning from maps is gauged by their ability to understand what signs on maps mean and to reason about this geographical information. The students were asked initially to define maps to determine their general understanding of the purpose and nature of maps. This was followed by a series of tasks involving the students' understanding of the element of direction and the substantive concepts of transport and rural land use on maps in either Atlas 1 or Atlas 2. These tasks were implemented when the students were seven years old and again when they were eight years old.

The students' definitions of maps are summarised in Table 12. In a previous study the author (Gerber, 1980) established a continuum of students' definitions of maps which reflected their cognitive development. The second lowest level was to see a map as a means of finding one's way around and the third level of the four level continuum was to see a map as a location of places. From the students' responses it is possible to say that by age seven years the students defined maps by their usefulness for finding one's way around. However, by age eight years one of the students had moved to a higher level of understanding about maps, i.e. maps locate places. The students' understanding here is ahead of that of most students.

Table 12. Students' Definitions of Maps

Student	Definition at Age 7 Years	Definition at Age 8 Years
Gregory	Something you need if you are travelling or you are lost.	Something that you use when you are lost to help you find your way back to safety.
Edward	Something that if you are on a boat you can find things, e.g. green post or red post, or on a road you can find places, e.g. streets.	A sketch of a place with markings of where things are.

The students' understanding of the purpose of a map was established by asking them to say what is the purpose of a population map of New South Wales from Atlas 1 and to say how they deduced the map's purpose. The students read the title to the map and used this title to determine the purpose of this map. This presented no difficulty for them. The information on the map which the students used to confirm the purpose of the map is summarised in Table 13. At age seven years the names of places were the basis for this reasoning. However, by age eight years, the students were able to use additional information, including the name of the State and adjacent States and the shape of the State. These responses indicate a substantial development in the students' spatial reasoning.

Table 13. Students' Reasoning of the Purpose of a Population Map of New South Wales (Atlas 1)

Student	1984	1985
Gregory	Title; Names of places.	Names of places; State name; Shape of N.S.W.
Edward	Names of places.	Names of places; Adjacent States; State name.

The students' understanding of direction was analysed by asking them to establish where north is on comparable settlement maps in Atlas 1 and Atlas 2. The results of this analysis are summarised in Tables 14 and 15. For the simpler Atlas 1 the students used the compass on the map and known places to calculate the direction of north. For the map designed for lower secondary students in Atlas 2 one student could not handle the concepts of latitude and longitude to complete the task, whereas the other student displayed astute reasoning based on knowing

Table 14. Students' Understanding of Direction on an Atlas Map (Atlas 1)

Student	1984	1985
Gregory	Compass to find north; Names of known places.	Compass to find north; Names of known places.
Edward	Names of known places.	Compass to find north; Names of known places.

Table 15. Students' Understanding of Direction on an Atlas Map (Atlas 2)

Student	1984	1985
Gregory	Cannot do it.	Cannot do it.
Edward	North is at the top of the map; Known locations of places.	Known locations of places; Title at the top of the map.

cartographic conventions such as north points to the top of the map where there is no direction indicator and the title is at the top of the map, to deduce where north is on this map.

A more advanced understanding of the concept of direction was required when the students were asked to describe the direction of flow of the rivers in Australia as represented on a map in Atlas 1. The students' responses are summarised in Table 16. They indicate that by age seven years these students understood that the direction of a river's flow is determined from its source to its mouth. In doing so, the students revealed a reasonable understanding of the pattern of coastal and inland drainage in Australia - an understanding beyond their years.

Table 16. Students' Understanding of the Direction of River Flow (Atlas 1)

Year	Gregory's Responses	Edward's Responses
1984	From inland to the sea.	They start near the highlands and run down to a lake or to the sea.
1985	From the mountains to the lakes or to the ocean.	From the mountains to the lakes or to the sea. The rivers join together to form one big river.

The students' understanding of the patterns of transport on an atlas map containing pictorial signs involved them describing the locations of different forms of transportation within Australia. The results of this analysis are summarised in Table 17. Here, the students' responses relied heavily upon their use of directions and place names. At age seven years, the students referred to specific directions and place names in their responses. However, by age eight years, they

were capable of generalising locations and were able to refer to general patterns.

Table 17. Students' Understanding of Patterns of Transport in Australia (Atlas 1)

Tasks	Gregory's Responses		Edward's Responses	
	1984	1985	1984	1985
1. Where are most roads?	South-east.	Sydney/ Melbourne.	Melbourne/ Sydney.	Victoria/ N.S.W.
2. Where are the large airports?	NE, E, SE, S. Australia and big cities.	Big cities and resorts.	Near large cities, large resorts and coastal cities.	Resorts and capital cities.
3. Where are the railways?	SE, E, SW.	Around large centres in Australia especially in the south-east.	Join the big cities and some small places.	East coast between the main cities.

The final task of understanding focussed on the students' understanding of the rural land use patterns on maps in Atlas 1 and Atlas 2. The information represented in Atlas 2 is more sophisticated and consists of more abstract signs. The results of the students' responses are summarised in Tables 18 and 19. The different levels of cartographic information did not deter the students and they were able to provide comprehensive answers for both maps even by the age of seven years. What is different in the students' responses is their ability to generalise information from age seven to age eight years. This ability reflects the development of their concept of rural land use in particular and their concept development in general. This indicates that both of these students have displayed considerable ability to reason about geographical concepts by the time they reached eight years of age, even when this information has an abstract form of presentation.

At an age when many students are able to focus on discrete pieces of information presented in cartographic forms, these students are displaying a reasonable competence in generalising geographic information. They are quite capable of reading different kinds of cartographic presentations to derive this information, even though they prefer pictor-

Table 18. Students' Understanding of Rural Land Use Patterns (Atlas 1)

Year	Gregory's Responses	Edward's Responses
1984	Lots of beef cattle in Northern Territory; beef and sheep in Queensland; dairy cattle in coastal N.S.W. and sheep inland; a mixture in Tasmania; wheat in Victoria; sheep, wheat and grapes in S.A.; wheat, dairy and sheep in W.A.	Lots of beef in northern parts; lots of sheep in the bottom of the map; sugar cane in coastal Queensland; fruit at the bottom of the map; sheep grazed near grapes.
1985	Beef in the hot north; fruits in the south; nothing in the deserts; sugar on the coast; sheep closer to the coast than beef; dairy cattle on the coast.	Concentration in eastern Australia with a little around Western Australia; sugar and dairying along the east coast.

Table 19. Students' Understanding of Rural Land Use Patterns (Atlas 2)

Year	Gregory's Responses	Edward's Responses
1984	Wheat - Queensland, N.S.W., S.A. and Victoria; Pineapples - north east N.S.W. and Queensland coast. Fishing around Mt Gambier, Perth, Sydney, Brisbane, Launceston. Vegetables - S.A. to N.S.W. Grapes in Murray River area. Sugar on the Queensland coast. Fruits in N.S.W. and Victoria.	Wheat and grains around the coast of S.A., N.S.W., but inland in Victoria and Queensland. Stone fruits in Victoria and N.S.W. Vegetables near wheat. Few crops in Western Australia. No crops in Northern Territory.
1985	Coastal fishing; inland farming along rivers; fruit and sugar in east coast; wheat in drier inland areas.	Wheat and grains in the south-east. Fishing along S.E. coasts. Sugar along N.E. coast. Vegetables and fruits near Melbourne, Canberra and Adelaide.

ial representations to abstract forms of representation. In short, their reasoning ability and their understanding of cartographic information is quite advanced.

Students' Ability to Search for Information on Maps

One final piece of evidence in the students' ability to derive meaning from maps is their ability to search for information on these maps. This evidence was obtained by observing students' actions as

they searched for relevant information on the maps and by asking students to say how they found the appropriate information. The students were asked similar questions for comparable maps in Atlas 1 and Atlas 2. Specifically, the students were asked to find the largest city in Western Australia and the largest city in Bolivia. In each case, they were directed to particular maps in the atlases. The results of this investigation are summarised in Tables 20 and 21.

The most efficient way to search for information on a map is to focus first on the title of the map to establish the purpose of the map. Then the legend should be examined closely to determine the code of signs. After that, eye movements should occur between the map area and the legend to complete the specific investigation. The responses in both cases revealed a consistency in the students' searching of the different scaled maps to find out their answers. This consistency involved an initial focus on the legend to decode the signs used on the map. This was followed by a systematic search of the map area for the relevant signs for the task, e.g. the sign for cities. Often this searching process involved a number of eye movements back to the

Table 20. Students' Ability to Search for the Largest City in Western Australia

ATLAS 1		ATLAS 2	
Gregory's Search	Edward's Search	Gregory's Search	Edward's Search
Study the key ↓ Locate signs and their names ↓ Focus on the centre of the map ↓ Focus on the top of the map ↓ Focus on the bottom of the map ↓ Locate the sign for large city ↓ Name the city	Study the key ↓ Read the names in the key ↓ Read the signs in the key ↓ Search the top of the map ↓ Search the left-centre of the map ↓ Search bottom of the map ↓ Locate the sign for large city ↓ Name the city	Study the key ↓ Read the names in the key ↓ Select the relevant sign in the key ↓ Search along the coastline ↓ Locate the sign for a large city ↓ Search inland areas ↓ Decide on the largest city	Study the key ↓ Read the names in the key ↓ Read the signs in the key ↓ Search inland areas ↓ Search coast from south to north ↓ Find the relevant sign for the city ↓ Recheck the key ↓ Decide on the largest city

Table 21. Students' Ability to Search for the Largest City in Bolivia

ATLAS 1		ATLAS 2	
Gregory's Search	Edward's Search	Gregory's Search	Edward's Search
Studied key ↓ Read names of signs ↓ Associated signs with names ↓ Scan around map ↓ Focus on the middle of the map ↓ Locate country of Bolivia ↓ Back to legend for city sign ↓ Revert back to country area to find largest city	Checked shape of continent ↓ Scanned map in circular fashion to check the colours ↓ Looked for names around the country ↓ Decoded signs in the legend ↓ Revert back to country area ↓ Selected the label for the city	Search map to find Bolivia ↓ Studied key to find population of cities ↓ Identify relevant signs ↓ Revert back to country area for Bolivia ↓ Located the darkest name - La Paz	Studied key for countries ↓ Observed black square for a capital city ↓ Circular observation of map area ↓ Located the capital city - La Paz ↓ Couldn't decide which was the largest city

legend to check for details. The actual search of the map area often consisted of eye movements along features of distinctive shape, e.g. the coastline of a land mass. Occasionally, this search consisted of a general circular or north-south, east-west sweep over the map area.

The consistency of the students' search process to obtain relevant cartographic information seems to enhance their ability to generalise geographical information from maps. It is all part of the accelerated development of their perception and understanding of cartographic information.

CURRICULUM IMPLICATIONS FOR USING MAPS WITH GIFTED STUDENTS

Teachers preparing geographical or environmental learning experiences for these two students need to focus on individualised learning experiences with maps which challenge the students to their ability. There is little doubt that gifted students such as these two possess

advanced spatial ability, map-reading ability and map-reasoning levels. Also, they have the ability to make reasoned judgements when they read maps and display a thoroughness when they search for information on maps.

What then can teachers do to maximise these abilities? Some answers can be determined by focussing on four aspects:

1. Development of a philosophy of individualising student learning.
2. Design of an effective needs-based curriculum in social and environmental education.
3. Use of a range of methods of teaching and learning.
4. Select resources appropriate to the needs and abilities of the gifted students.

The development of a philosophy of individualised learning is crucial for teachers who wish to challenge gifted learners. Individualised learning enables students to work at their pace on issues which enhance their understanding of social and environmental issues. Gifted individuals then have the opportunity to display their understanding of these issues rather than their having to keep to a class norm. The concept of individualisation should enable these students to negotiate with their teacher of aspects of their studies. For example, in their studies of ancient times, these students may wish to study maps of ancient sites to appreciate the nature of life and its organisation rather than look at selected photographs provided by the teacher. This will enable the students to produce quite different outcomes from those normally expected in classrooms for younger students. In this situation the teacher will develop roles of facilitator of individualised learning activities, reactor to difficult and sometimes obscure questions and providor of unusual or advanced map resources.

Adoption of a needs-based curriculum in studies of people and their environments ensues from a philosophy of individualisation in learning. Such a curriculum with gifted students involves a considerable amount of discussion and negotiation so that these able students can study issues which are relevant to them or study aspects of topics which are important to them. Quite often gifted students focus need on issues which they have been reading about or which they have seen on the media. A teacher who has worked for some time with this type of student will have a "feel" for their learning needs of social and environmental issues and can be a constructive facilitator of these needs. Students such as these two, who have quite a strong global place awareness, often express needs to investigate unusual parts of the world, e.g.

one student expressed an interest in Dahomey on one occasion and the United Arab Emirates on another occasion. It is quite easy to see that such a student's learning needs would not match that of a teacher wanting to design a program for a whole class of students.

Within the philosophy of individualisation, the teacher can foster a variety of methods of learning which these gifted students will relish. Young gifted students will share their studies with fellow class members on request. However, they will not push to act as tutors for other students. Nor will they rush to want to work with a group of other advanced learners. On occasions, the desire to work with a friend on a large, mutually-interesting project is important. Here, discussion of ways to solve a problem, e.g. the best itinerary for a holiday in Queensland, can be achieved. However, these students largely prefer to pursue their challenges by themselves. Even when two such students elect to work on a common topic, they tend to adopt individual stances and to address the issue from their own standpoint. Therefore, a study of holidays will see each student drawing heavily on their personal experiences to plan their desired family holiday. Research will be a vital method of study used by these young students, often using quite difficult documents, e.g. abstract maps. Similarly, these students should be encouraged to use novel and creative forms of reporting the results of their studies. They may wish to produce models, elaborate diagrams, taped reports, jingles and comprehensive maps. This creativity should be encouraged, even if the teacher has to crystallise an idea which the students have and help these young people bring it to fruition.

The selection of resources for these students is quite different than for the remainder of the class. These young students are able to search for their own resources in libraries, in atlases and in the community. Often the teacher can assist by informing these students on the sources of desired resources. In addition, these students will require more sophisticated resources, e.g. their maps may contain pictorial and abstract signs and may contain more than one layer of information. These students will also desire a greater variety of primary data to use in their studies, e.g. timetables for trains and buses. Because of the individualised studies these students undertake, there is every likelihood that most of these studies will require resources which have to be obtained outside of the school's resource collection.

All of these implications suggest that teaching and learning with such gifted students can be very demanding, but if allowed to nurture the teacher and the student experience an exceptionally rewarding time.

REFERENCES

A.C.E.R. (1978a), Space Test, Mathematics Aptitude Profile Series, Hawthorn, Victoria, A.C.E.R.

A.C.E.R. (1978b), Space Test, Teachers Handbook, MAPS, Hawthorn, Victoria, A.C.E.R.

Clarke, G. (1983), Guidelines for the Recognition of Gifted Pupils, York, Longman for Schools Council.

Collis, K. and Biggs, J. (1979), Classroom Examples of Cognitive Development: The SOLO Taxonomy, Hobart, University of Tasmania.

Daniels, P. (1983), Teaching the Gifted/Learning Disabled Child, Rockville, Maryland, Aspen Systems Corporation.

De Haan, R. and Havighurst, R. (1961), Educating gifted children, Chicago Review of Education, Chicago, University of Chicago.

Department of Education and Science (1977), Gifted Children in Middle and Comprehensive Secondary Schools, HMI Series, Matters for Discussion 4, HMSO.

Director Generals' Committee (1983), Education of the Gifted in Queensland State Schools, Brisbane, Department of Education.

Feldman, D. and Salomon, G. (1969), A Map Drawing and Map Reading Exercise, Stanford, California, Stanford Centre for Research and Development.

Gerber, R. (1980), Development of Competence and Performance in Cartographic Language by Children at the Concrete Level of Map-Reasoning, Ph.D. Thesis, University of Queensland, Brisbane.

Gerber, R. (1981a), Young children and their understanding of the elements of maps, Teaching Geography, 6(3), 128-133.

Gerber, R. (1981b), Towards an understanding of the development of competence and performance in cartographic language, The Cartographic Journal, 18(2), 104-111.

Gerber, R. (1982), An international study of children's perception and understanding of type used on atlas maps, The Cartographic Journal, 19(2), 115-121.

Gerber, R. (1984a), Cartographic information and the younger map user, Projection, 1-8.

Gerber, R. (1984b), Factors affecting the competence and performance in map language for children at the concrete level of map-reasoning, Cartography, 13(3), 205-210.

Gerber, R. (1985), Competence and performance in cartographic language, in D. Boardman (ed.), New Directions in Geographical Education, Barcombe, The Falmer Press, 153-170.

Heamon, A. (1973), The maturation of spatial ability in geography, Educational Research, 16(1), 60-66.

Henry, N. (ed.) (1958), Education for the Gifted, 57th Yearbook of NSSE, Chicago, Illinois.

Kerry, T. (1978), Teaching Bright Pupuils, Teacher Education Project, Nottingham, Nottingham University.

Marland Report (1971), Education of the gifted and Talented, Washington, D.C., United States Department of Health, Education and Welfare.

Ogilvie, E. (1973), Gifted Children in Primary Schools, Schools Council Research Studies, Basingstoke, Macmillan.

Povey, R. (1980), Educating the Gifted Child, London, Harper and Row.

Rhys, W. (1972), The development of logical thinking, in N. Graves (ed.), New Movements in the Study and Teaching of Geography, Melbourne, Cheshire, 93-106.

Terman, L. (1926), Genetic Studies of Genius, Vol. 1, Mental and Physical Traits of a Thousand Gifted Children, Stanford, Stanford University Press.

Stringer, W. (1981), A Study of Some Aspects of the Ability of Adolescents to Think Geographically, M.Ed. Thesis, Melbourne, Monash University.

Dr. Maria Magdalena Wilczyńska-Wołoszyn

The Use of Pictures in the Teaching of Geography

1. Introduction

Illustrations, particularly pictures, are often used as teaching aids in the teaching of various subjects. They are well-liked by students and are a pleasant variation to lessons. Unfortunately, however, they often remain just an entertaining attraction instead of being a useful, multi-faceted educational tool. Despite superficial appearances, the correct adaptation of pictures to the goals of teaching is difficult, especially in geography. My experiences in teaching geography in Polish public schools and in teaching geography pedagogy at Warsaw University indicate that teachers encounter many problems and misunderstandings in this area. This pilot study presents some of these problems.

The study was undertaken to demonstrate the following things to prospective geography teachers:

1. differences between teachers and students in the perception of pictures;
2. methods of analyzing teachers' and students' responses to pictures to identify their difficulties and correct teaching strategies;
3. ways of incorporating pictures into lesson plans.

The study was successful in achieving the above aims. In addition, the study also shed light on the following areas:

1. the kinds of teaching situations that call for illustrations;
2. the selection and arrangement of illustrations in harmony with the goals of teaching;

3. the methodology of illustration for selected geographical problems.

Because this is a pilot study, I will discuss these matters without statistical analysis.

2. Subjects, Materials, and Method

The adult participants in the study were fourth-year university geography students who were one year from graduation with a Master's degree and a license to teach geography in high school. They had a good geographical and pedagogical preparation for participation in the study. The elementary school participants were 13 and 14-year-old students who had had three years of geography in accordance with the Polish curriculum. They had been exposed to the geographic elements dealt with in the study during the two previous years' geography classes. They were expected, therefore, to know basic geographical terms and have mental images of the given geographical objects. These images, however, were formed uniquely from illustrations and descriptions since the type of geographical subject used in the study is not found in Poland.

A picture was chosen with the following considerations in mind:

1. It would have clearly exhibited geographical subjects;
2. It would also include elements which could distract students while still possessing geographical significance.

The prospective teachers were not informed of these criteria.

Based on the picture, each prospective teacher prepared three questions for the students. All the written questions were discussed by the whole group. From over one hundred questions, the following six were chosen for the survey:

1. What does the picture show?
2. What does the glacier look like?
3. What does the glacial valley look like?
4. What do the mountains look like?
5. What does the vegetation look like?
6. What is the temperature of the air? (Support your answer.)

The open-ended type of question was preferred because it reveals the student's train of thought.

The students were given the questions one at a time and asked to write their responses. The students' responses were taken back to the prospective teachers, who classified, evaluated, and discussed them. Their comments were recorded for later comparison with the students' responses.

3. Results

A basic difference observed between the prospective teachers and the students was in the kind of language each group used. In their original questions, the adults used technical vocabulary including many sophisticated terms. During the selection process, the language had to be brought down to the students' level. Having been thus made aware of the students' limited background in geography, the teachers were prepared for the simple descriptions and comparisons used by the students in their responses.

A more important difference was that of the perception of the content of the picture. The tendency for both groups was to go beyond the limits of the picture, but each group did so in its own way. For example, the prospective teachers suggested questions on general geography such as "how are mountains formed?" or "how are glaciers formed?." There were also questions demanding numerical answers such as "how high are the mountains?," "how long is the glacier?," "how fast is it moving?." Finally, there

were questions unanswerable from the picture as presented. For example, the question "what are the main parts of a glacier?" was proposed although only one main part was visible. "What kind of rock are the mountains made of?" was also suggested although it could in no way be answered given the scale and technical quality of the picture. The students had different experiences and interests than the teachers, so their imaginations suggested different images such as "the people are drinking refreshments," "some people have mountaineering equipment," and "the glacier is located near a beach and an outdoor café." The students' answers were sometimes contradictory. For example, one student wrote "the people are dressed in ski clothes," while another wrote that "the people are in bathing suits."

The rich content of the picture excited the children's imagination so much that they demanded extra time on the first question to write their wide-ranging impressions. Their subsequent answers were more factual and brief. The picture brought about a similar phenomenon with the prospective teachers observable in their suggested questions cited above. It was very difficult to convince them that the students would not be capable of answering those questions from the data contained in the picture.

The background, prior experiences, and current interests of of each group influenced their observation and comprehension of the picture's content. The students eyes were attracted primarily to the color and activity of the scene. These were almost always the first things mentioned by the children. Some of them did not even mention the glacier or mountains, but all of them

referred to the outdoor café and the people. The geographical aspects were often included as an afterthought, e.g. " there is a café with people--also a glacier." The students wrote most eagerly and colorfully about what was most familiar. Examples of this would be "a café with people admiring the mountain landscape," "people viewing the beauty of a glacier and mountains," "tourists enjoying the beautiful warm summer day in the mountains," "people sitting under umbrellas--everything is very colorful," and "I envy the view those people have."

The interest and emotion of the people shown in the picture produced similar emotion and interest in the students. These were expressed in various ways inadvertently mentioning the touristic attractiveness of the landscape, e.g. "the mountains are high and beautiful," "the mountains have fantastic shapes," "some of the mountains look as if they were sculptured," "the glacier looks dangerous but fascinating," "above the huge, grim mountains there is a beautiful blue and cloudless sky," "people who breathe this fresh, clean air feel better." Those responses indicate that the students understood the picture mainly as presenting the touristic aspects of the site.

The prospective teachers understood the content and application of the picture entirely differently than the students did. Being geographers, they gave their first attention to the glacier and mountains despite the distance, motionlessness, and colorlessness of those elements. Expecting the answer to the question "What does the picture show?" to be "an alpine landscape with a glacier," they saw the pictures's application to be the identification of geographical objects. Not until they read the

students' totally different answers did they realize other applications of the picture. The outdoor café, practically ignored in the teachers' questions but mentioned in all the students' answers, played a key role. It had a detrimental effect with respect to the teachers' understanding of the picture, but a beneficial effect in the case of the students' understanding. Use of the picture as the students understood it would thus be simpler and would not require the teacher to redirect students' attention.

On the first question, the wide divergence between the expected answers and those that were given indicates that the prospective teachers failed to recognize that question's lack of focus. In the discussion following the experiment, one of them aptly described the question as "one that a teacher would use when he doesn't know what to ask." The more direct response to the succeeding questions confirms that those more specific questions had greater pedagogical value.

Questions 2 through 5, which asked about the appearance of various geographical objects, revealed two difficulties that the students had in understanding the picture. The first was their preoccupation with color. Nearly all the students mentioned color before anything else and their responses were often contradictory. Students wrote, for example, that the glacier was "snowy white," "gray," and "blueish." The mountains, according to the students, were either "black," "brown," or "blue-gray." The vegetation was described by different students as "green," "light green," or "bright green." Considering the lighting and distances in the picture, color is not a relevant factor in the

description of any of the objects. The prospective teachers later realized that this problem could have been avoided by asking more specific questions about the objects' discernable features.

A second problem was the students' inability to judge the distances and differences in height between different objects in the picture. Partcularly surprising to the teachers was the response of about 1/3 of the students who said that the mountains were low. Careful analysis of the answers revealed that the students perceived the distant mountains as being low, e.g. "nearby we see huge mountains; those further away are obviously lower;" "the mountains which have snow aren't big--just three or four times as big as a person." The above answers indicate that the students distingushed the nearby objects from the distant ones, but did not understand the illusion caused by distance. The teachers suggested that this problem could have been solved by supplementing the picture with information on the distances and heights.

The students also had difficulty using the picture to recognize features of geographical objects. This was especially true of the glacier, an object that none of them had ever seen in nature. Each student listed two to four of its features. Taking all the student responses together, nearly all the important features were included. The most difficult problem was estimation of the glacier's depth. Few students discussed it. Of those who did, a few said that the glacier was in a deep, U-shaped valley. More of them, however, wrote of a flat-bottomed valley and one even said that the glacier was "surely not more

than one meter deep." Another feature discussed by the students was the glacier's movement. The glacier was most often compared to a river or described as sliding, flowing, or advancing. A number of students, however did not see the glacier as a moving object, comparing it to a road or stating that it lay in a valley. Since no student mentioned the gradient of the valley, they may not have been aware that motion is an essential feature of a glacier. In fact, the picture is not suitable for the description of these geographical features because the distances are too great to allow the perception of details, but not great enough to permit inclusion of the entire glacier. The one feature that could be easily recognized from the picture was the longitudinal profile of the glacier. With that, the students had no difficulty.

In answer to the question "What is the temperature of the air? Support your answer," the teachers expected the differentiation of three temperature zones. The first would be the foreground of the picture where people are lightly dressed indicating summer temperatures of the middle latitudes. The second zone would be the background of the picture where the temperature would be less than $0^{o}C$ ($32^{o}F$) because of the presence of snow. The third zone would take in the area near the glacier which would be cooler than at the outdoor café because of the glacier, but warmer than in the snowy areas because of the presence of trees.

The majority of students, however, considered the air temperature only at the café. They suggested high temperatures, e.g. $+20^{o}C$ ($68^{o}F$), $+26^{o}C$ ($78^{o}F$), from $+18^{o}$ to $25^{o}C$ (64^{o} to $76^{o}F$),

as well as medium temperatures, +10°C (50°F), +15°C (59°F). Ironically, both temperature ranges were supported by the statement "the people are in short sleeves and under umbrellas because of the intense sun." In the responses of a few students, the temperature was estimated at below 0°C (32°F). The students even altered the facts to fit their preconception, e.g. "the temperature is -20°C (-4°F) because of the very warmly dressed people and the glacier," or, "the temperature is below 0°C (32°F) because people are dressed in ski clothes. None of the people in the picture were so dressed.

Only a small group of students noticed the seeming contradiction between the people's light clothing, the glacier, and the snow-covered mountains. Some of them were unable to reconcile these facts. One wrote, "it is warm because the people are lightly dressed; they are not in furs and caps, but it should be cold since there is a glacier." A few students, however, tried to explain. One, for example, wrote, "it is rather warm--28° to 30°C (82° to 86°F) because the people are lightly dressed. The glacier is there because it is very thick and does not melt." Another student explained that "the temperature is fairly high because the people at the outdoor café are lightly dressed, but it's much lower in the mountains where there is snow." Those responses indicate that some of the students were close to explaining the differences of temperature. With the aid of a teacher, the problem could have been solved.

Another thing that surprised the prospective teachers was the inappropriate specificity of the students' temperature estimates, usually expressed to the exact degree rather than as

a range or verbal description. The teachers later concluded that that type of question should specify the degree of precision that is expected.

3. Discussion

This pilot study indicates that one of the most important causes of the incorrect use of illustrations is the difference between teachers' and students' perception and understanding of pictures. These differences are usually caused by differences in interests. This factor is more important when using illustrations than when presenting geographical information by other means. When reading or listening to a teacher, each student receives the information little by little and in the same order as the other students. The teacher, therefore, can monitor the students' reactions as he proceeds. According to the students' reactions of irritation, boredom, interest, daydreaming, or enjoyment, the teacher can modify the manner, order, and tempo of his presentation.

A picture, in contrast, releases its entire content in a single moment. Each student finds something of interest to himself. That interest is usually perceived by the teacher and often associated, especially by young teachers, with understanding and retention. In reality, however, the attention of the students may be focused on totally different objects than that of the teacher, particularly if the illustration is rich in content. The maintaining of students' attention on the desired object is very difficult and demands great professional skill from the teacher in anticipating the students' associations and considering them in his planning.

At the very beginning of this planning, a decision must be made as to what information can be drawn from an illustration and what cannot. Non-pictorial information and that which cannot be taken from an illustration due to scale and technical limitations should be communicated by other methods such as teacher commentary.

The information which is available from illustrations can then be used in different ways. This study made it possible to define several functions of illustrations:

1. to confirm previously-presented information;
2. to present and clarify facts;
3. to identify and classify geographical objects;
4. to form mental images of geographical objects.

The function that pictures are to perform must govern their selection as and arrangement as well as the methods of their application.

The simplest and most popular use of illustrations is for the supplemention and authentication of material. This is done constantly in newspapers and magazines and on television. Teachers and students are thus accustomed to this function of illustrations. In this case, the picture need not be viewed for a long time, five to fifteen seconds is generally sufficient. Since the students play a passive role when illustrations are used in this way, they do not tire quickly and a fairly large number of illustrations, perhaps fifteen, can be utilized in a single class period.

The use of illustrations to present and clarify facts is a much more difficult task for teachers and requires thorough preparation. The teacher here is more than a narrator. He must help the students read and interpret the information from the

picture. He must also guide the discussion, taking into account the difficulty of the topic and the students interest in it. When the topic is straightforward and of interest to the students, his job is easy. If the picture used in this study, for example, were used for a lesson about mountain tourism, the students would not need any help from the teacher to draw the relevant facts. His only role would be to keep the facts in proper order. If, on the other hand, the topic is difficult or of lesser interest, the teacher's work is much harder. An attempt to use the same picture for a lesson about the climatic zonation of mountains, for example, would require the teacher to do three things. He would first have to help the students gather the relevant facts from the picture. (Most of the students in the study drew only upon the people's clothing.) He would then need to remind them of previously taught information about mountain climate. Finally, he would have to help them order and interpret all of that information to reach the desired goal. This use of pictures to present and clarify facts is much more time-consuming than using them as mere supplements to other text. One picture might thus be viewed for as long as fifteen minutes and only a few could be looked at during a class period.

The use of illustrations for the identification and clarification of geographical objects is quite simple. The teacher may use an illustration either to introduce, point out, and name objects himself or he may use the picture to verify the students' knowledge by asking them to identify the objects. This type of lesson is not very appealing to students because it involves rote memorization. The illustrations, therefore should be free of

potentially distracting elements. The main difficulty with this use of illustrations is assuring that the student correctly isolates the object being discussed. This is especially difficult when the student is totally unfamiliar with the object and its name. This problem, however, can often be overcome by supplementing the picture with a drawing of the same subject in which the various elements are labeled. Using different sizes of type for the labels can be an immediate aid to the student in classifying the objects. Diagrams may also be used for this purpose. When pictures are used for identification or classification they need not be viewed for a long time; one minute will suffice unless there are a large number of different objects in the picture. Care should be taken not to introduce too many objects or terms in a single class period since the students might easily confuse them with each other.

The use of pictures is indispensible in the forming of mental images, but that is their most difficult application. In the case of geographical objects, the main difficulty is that there is no single method that can be followed for all objects. The selection of illustrations and methods of using them depend on the kinds of essential features that the objects have. In some cases the category may be material, in others, shape, and in others structure, age, or size. A further complication is the tremendous size of geographical objects. If smaller elements are presented separately, the teacher cannot be sure that the student will correctly assemble them into a whole. On the other hand, a picture of a complete geographical object taken from a great distance loses many details. Therefore, a combination of pic-

tures must be used to show both details and the whole. Specially prepared drawings may solve this problem and, at the same time, separate the object under consideration from the surroundings. The teacher's job is to guide the observation process and point students to the relevant features of the objects. Furthermore, his actual classroom presentation of the pictures is a complicated task requiring careful ordering and timing since the pictures must be coordinated with each other and often presented simultaneously. When illustrations are used in this way, the time of presentation can vary greatly, less time being required for details than for major concepts. Only a few illustrations can be successfully utilized within one class period, although in some situations eight or ten might be called for.

4. Conclusion

This study has demonstrated that the perception of information from illustrations is a complicated process. Each illustration, each question from a teacher, and each answer of a student creates a new situation such that there is no single formula that can be followed in all situations. The suggestions here have been given to serve as a framework to help teachers organize their objectives and methods when using illustrations.

An examination of some of the new information technologies and their use in Canadian Geographic Education

by

Patricia Green-Milberg

John Abbott College

Box 2000
Ste Anne de Bellevue
Quebec H9X 3L9
Canada

An Examination of some of the New Information Techologies and their use in Canadian Geographic Education.

Patricia Green-Milberg - John Abbott College Box 2000, Ste Anne de Bellevue, Quebec H9X 3L9 Canada.

This paper examines some of the newer information technologies being introduced into Canada Schools, including video discs, video tex (Telidon) and Teleconferencing. Many of these technologies already have geographic applications. These are reviewed and suggested applications are also discussed. The paper concludes with the suggestion that 'Telematics' are adding a new dimension to the Educational systems of the world, and that geographers should take full advantage of them.

Developments in the twentieth century in communications technology have made it possible for learners to vicariously experience and absorb more information than people of any other period in history: as a result they have profoundly influenced learning in the basic sense of the process whereby attitudes and behaviour are permanently changed (Maddison 1983). The question is not therefore whether communications technology should be brought into the geography learning situation, as it is already in existance, (even though the influence of communications technology on formal education and curriculum development has been peripheral) but to thinking about the technology of education, ie the systematic application of the resources of scientific knowledge to the process that each individual has to go through in order to acquire and use knowledge (Dieuzeide, 1972).

Innovations in information technology rapidly diffuse through out our society, new variants such as videotext and video disc are altering educational radio and television and even causing great uncertainty about the continuing viability of other established tools such as text books and even the role of the traditional classroom teacher. It is only a short while ago that the teaching of mathematics was profoundly changed when the pocket calculator made the slide rule and all its associated tri-gonometrical and logarithmic tables obsolete.

The changes brought about by these new information technologies have therefore profoundly changed the teacher/student relationship in largely unexplored ways. This paper discusses some of

these information technologies and their impact on the geography classroom. The geography student of the 1980's derives much knowledge of the world from newspapers, film, and television, therefore when the student enters the classroom he brings with him vivid impressions gained through the various communications media.

It is from this kind of afterschool communications environment that the student comes into the classroom, and because of these vicarious experiences the traditional geographic teaching practices of verbal instruction of ideas and understandings becomes virtually impossible beyond a certain point in the learner's development. Famine no longer needs description, the student has already seen it. What is needed, is the students active involvement in the topic; discussions on what it means, the causes locally and globally, possible solutions and simulations of other scenarios. In this way audio visual images must be utilized into studies in physical, human, economic, cultural, political and bio-geography. Today's world of visual communications offers much more than teacher verbalism.

Videodiscs: Two types of videodiscs have been developed, the 'capacitance' or contact mainly used in the entertainment market and therefore not dealt with in this paper, and the optical or laser. One of the characteristics of the videodisc that designers find most intriguing is the interactive capability especially when it is under the programme control of an external micro computer. Laser videodiscs are capable of storing on a numbered

series over 54,000 frames of still or motion pictures, animation, audio and printed text. Random access capabilities allow the student to access any individual frame at any point on the disc. Due to its capacity to stimulate reality and to allow students to work at their own pace video can open major avenues of information and exploration. To understand our geographic world, students need to "see" everything everywhere, look into the past and examine the future, and on occasion temporarily acquire a kind of 'Supersight' permitting them to slow down or speed up, enlarge or diminish material, instant replay, question or fast forward.

Geography is a particularly visual discipline, from pictures, maps and globes to lantern slides, photographs and film. Film and slides still have a role to play in the geography curriculum, but they are no longer the medium of the future. One of the challenges of 1980's, 1990's is in interactive video and the integration of this form of media into the curriculum. Interactive video allows the student to select the sequences and images on the video relevant to his studies. Random access allows him to start or finish wherever he wants, recalling the item that is of interest, selecting the frame that is most useful. Working with additional visuals ie. Maps or aerial photographs can be compared to the visual on the screen. A map might show vegetation cover, the video will permit a closer analysis (even a seasonal analysis). By contriving visual and auditory impressions of environmental situations, together with the students' ability to control these impressions it is possible to supply 'real' or concrete experien-

ces upon whose basis more accurate understanding may be gained. In the complex world environment, the geography student is often unable to have a wide range of personal perceptual experiences therefore interactive video is becoming a realizable medium for geographic education. It is significantly different from other audio visual materials and opens up possibilities of influencing the objectives of the nature of classroom geography. The use of this type of technology suggests the possibility of fundamental changes in the structure and operation of geography in the education system, but presently developments are focusing on the use of technologies within the existing system and the ways in which technology can be used to facilitate learning materials. However, the educational implications for the application of interactive video are especially important for teaching. Most video (and film) result in an intellectual overload, the viewer is overwhelmed with viduals and information, and cannot select the sequences and images relevant to his studies. Interactive video not only allows this selection, but also permits the student to interact and review thereby integrating all the various experiences into a meaningful abstraction.

Geography teachers can use interactive video to help bridge the gap between the challenges of the developing scientific technologies. Interactive video allows the development of a new geographic education in which the students can explore a rich visual resource to create new juxtapositions of images: new appreciations of landscapes, and to proceed at their own pace to

allow them to identify and focus on landscape elements. This kind of learning is likely to be more strenuous than traditional classroom lectures, because the teacher's role is not to disseminate information but to help students develop ideas and think geographically. This form of development in the geography curriculum can produce students who have been trained to investigate the landscape and not see it as the picture postcard representation identified by Youngs (1984). Using the medium of interactive video in geography teaching students may be stimulated into an interest in the processes which are modifying their own environments. Interactive video may enable students to develop a feeling(s) for a region, create new themes, produce the ideal travelogue or even become involved in future curriculums, based on the knowledge about the present and understandings of current data, relationships and trends. eg. An interactive video module on the St. Lawrence River which is a favourite topic among Quebecois would not present a picture postcard distortion of a historical, idyllic river with scenic farmland and large cities. Predigested views could be refuted as various aspects of the topic are selected, studied, researched, compared and contrasted providing students with an opportunity to focus on the process of change using up-to-date data showing urban development encroaching on the farmland, pesticides and fertilizers from agricultural land causing pollution as is the urban development and showing the spectacular Saguenay polluted by industry and how the river is a health hazard.

Increasing integration of video and computer will have a powerful influence on the development of products for education. The emergence of these video-storage systems coupled with the growing sophistication of inexpensive computers are merging into a new medium called "videocomp". As an instructional tool this represents a quantum jump in the ability to control and programme instructional imagery, however a significant penetration of laser videodisc players in the home market or local learning centre is a pre-requisite to the use of videodiscs in education.

Institutions that have been involved in videodisc experimentation here in Canada, include Tele Universite of Quebec; O.I.S.E. Sheridan College and Banff Centre for Continuing Education. Videodiscs could be an extremely useful medium for education, however development costs are high and present technology does not permit users to record or erase the discs. Educational videodiscs systems presently (1985) cost about $3000 Canadian dollars, although prices are dropping. Producing the discs is also costly, preparing a master costs about $2500. If 500 copies are ordered the price would be approximately $28. per disc. Few schools in Canada have bought video disc player systems and whilst some research has taken place at the universities, few have actually purchased equipment (Tobin 1984). Another fascinating technological development to be considered by the geographer is Videotex.

Videotex: Videotex is another technologically innovative concept that provides users access to remote data banks through still

images displayed on television screens (Lyman 1983). The main feature of videotex is the electronic publication of textual, graphic and pictorial matter on a television screen, rather than on paper. This material is transmitted via the telephone line, coaxial cable and over the air. It is interactive because specific material is accessed only on the instructions of the user who is equipped with a key pad to issue instructions. Britain's PRESTEL was the first generation videotex service. Experiments in Britain and elsewhere have made it quite clear that videotex is not a service of mass appeal (Carey 1982, Sigel 1983). and must be developed from a narrower, institutional base.

Telidon, the second generation videotex system developed by the Canadian Department of Communications, moved from the laboratory into the field in 1980. Presently few Telidon applications have been instituted at elementary or secondary schools, however the Ontario Telidon network does link 75 secondary schools. T.V. Ontario is the big field tester for educational Telidon applications. At the higher education levels some colleges are introducing courses in Telidon page creation, whilst some universities such as University of Western Ontario are preparing content for Telidon data-bases.

Quebec Tele-Universite uses Telidon graphics in supplementing teleconferencing with visual material, and the University of Quebec has integrated Telidon graphics and 'Plato' (Programmed logic for Automated Teaching Operations) software into its distance education services. T.V. Ontario's database has provided an

excellent service for geography teachers in its 'Eurasian Geography Review'. The sequence offered marries traditional pen/paper/textbook learning with new technologies. The objective of the review is to identify a country based upon clues dealing with latitude and longitude, birth and death rates, food consumption and G.N.P. Students have to have knowledge of mapping skills to be able to calculate natural increases, recognize the relationship between food consumption statistics and level of economic development and the meaning of G.N.P. in order to locate the specific nation successfully. The end result of the exercise is a test of learned skills, the reward is a completed map dividing Eurasia into regions of technological development.

Telidon in 1985 is a quite different creature from Telidon of 1981. While the basic approach remains, that of a system of computer codes to produce colour graphic images, the early Telidon standard has given way to NAPLPS (North American Presentation Level Protocol Syntax) and microcomputers are outfitted with a software decoder. Predictions made by the University of Guelph in 1983 that Telidon would emerge as an enhanced capability of the microcomputer rather than an "add on" to the T.V. set seems likely of fulfillment (Moore 1985). Telidon is extremely easy to use for first time users and a growing number of schools, universities and educational authorities are investigating the uses of Telidon for such diverse uses as computer-aided learning, (CAL) distance education, audio-visual presentaton (Telidons superb graphics can be animated) student orientation

and internal administration. Telidon still has a long way to go to catch up to PRESTEL, Britain's view data service, which can present over 330,000 pages from over 1,200 sources, making it the largest information service of its kind in the world. In January 1985 over 51,000 suitably equipped television sets were receiving service from PRESTEL, however the Canadian viewpoint is that the PRESTEL Standard is not good enough for Canadian clientèle. The British viewpoint is that British Telecom had excess line capability and it is better to use it than wait.

Teleconferencing: Teleconferencing is neither difficult nor expensive. Located in a media centre it consists of a telephone with a speakar attached to amplify the sound. Video teleconferencing takes the technology one step further. In 1983 the Anik C3 satellite and the Integrated Satellite Business Network of Trans-Canada Telephone Systems' expanded and enhanced their services. Presently 20 out of 71 universities and 30 of 196 colleges in Canada use teleconferencing (Graham). Some of whom are using it to teach Geography. Teleconferencing shows that format and content vary but live discussions and interaction among participants and instructor create a classroom situation. Limited experimentation using satellite transmission with the use of two wayfull motion video communications has been done, however for education the costs are prohibitive, therefore cost sharing is necessary to share resources and cost overlap.

The information revolution is slowly sweeping across Canada, and many of our laws, regulations and institutions are sadly in need of revision. The scope of these new technologies affecting education are so dramatic and involve such a broad spectrum of telecommunications that the French word 'telematics' is used to embrace all of this expanding and integrating technology (Coates 1984). Technology is one of the greatest things to have happened to education.

Telematics is adding a new dimension to our planet. The traditional technologies of printing, and more recently radio and television have established a global educational base, telecommunications add a new vitality.

All of this however suggests the possibility of fundamental changes in the structure and operation of education systems both here in Canada and the rest of the world: Presently educators see these technological changes in terms of the existing systems. In Canada education is under Provincial jurisdiction, and Federally developed technologies present a problem of jurisdictional mandate. Industrially Canada's decentralized educational system presents a disadvantage to that of a single market system.

It is well known that technology in education can enhance the teaching learning process and provide new learning opportunities, (as a few of the technologies discussed have shown). However they

also demand the restructuring of some educational programmes and processes, and it is unfortunate that frequently educational institutions are victims of myopic vision.

BIBLIOGRAPHY

Carey, J. Electronic Text and Higher Education. A report for the Corporation od Public Broadcasting and the Electronic Text Consortium, San Diego State University. 1982

Coates, J.F. What Principals Should Know About Telematics, Their Impact On Education. NASSP Bulletin Vol: 68, No 471, April '84

Currier, R.L. Interactive Videodisc Learning Systems. High Technology. Nov. 1983 p. 52

Dieuzeide, H. Technology and Development in Education. Paris: UNESCO. 1972

Dunnett, C. Building Connections for the Growth of Distance Education. Educational Technology/December 1984 Vol XXIV, No 12

Graham, M. Educational Teleconferencing in Canada #14 Toronto: Canadian Commission for UNESCO. January 1984

Hatcher, B. Teleconferencing: Going to the Source NASSP Bulletin Vol 68, No 473, Sept. '84

H.M.S.O. Information Technology News. London: 1985

Howe, S. Optical Videodiscs Media & Methods. October 1982 Vol. 19:2

Lyman, P. Canada's Video Revolution Toronto: James Lorimer and Company. 1983 p.4

Maddison, J. Education in the Microelectronics Era. Mylton Keynes: The Open University Press 1983 p. 31

Mason, R. Laser Disks for Micros. Library Journal, February 15th 1985 Vol. 710

Moore, G. Telidon: Its Potential and Problems for Traditional and Distance Education. Canadian Journal of Educational Communication; Vol 14 No 1. 1935 p. 10

Sigel, E. The Future of Videotext. Englewood Cliffs, N.J. Prentice-Hall 1983

Tobin, J. Educational Videodisc in Canada. #13 Toronto: Canadian Commission for UNESCO 1984

Tobin, J. and Sharon, D. New Technologies in Education in Canada Issues and Concerns #17 Toronto: Canadian Commission for UNESCO 1984

Wilson, J. Educational Applications of Videotext/Telidon in Canada # 11 Toronto: Canadian Commission for UNESCO 1984 p. 11-12

Conference regionale des Pays mediterraneens
Barcelone 1986

Commission " Education geographique "
Symposium de Sitges

Contribution de L. Faugères, professeur
responsable du G E P P A G
Université de Picardie, Amiens

Titre: " La promotion des aides audio-visuelles à l'éducation géographique Orientations et réalisations du Groupe de travail français (C.N.G, Paris)".

Abstract

The working group " Geography and audiovisuals ", a group of the french National Committee of Geography has been founded in 1979. The first members of the group were some geographers who had been previously involved in various individual audio-visual attempts , trying to improve as much as possible audio-visual aids in their research, in their teaching and, more generally , in their communication with the public. Among them were specially concerned Ph. Pinchemel, J.Malaurie, L.Faugères, Cl. Collin-Delavaud, P. Birot, J.L. Tissier and some others, equally dealing with human and physical geography. One of the first concretization of the group activity has been the realization of " Des geographes ", a multi-sided 16 mm film, the aim of which was to present several geographers at work and through them to introduce to fresh and more traditionnal ways to do geography. An other demonstration has been the 32 Workshop " Audio-visual aids in educational geography ", which has opened 3 sessions of shows and discussions during last Paris International Congress of I.G.U (1984). Due to the success of the workshop, it has been kindly accepted by the I.G.U Secretary and Prof. J.P. Stoltman , President of the Geographical Education Commission " that a Section of the Commission would act as a specific group devoted to international promotion of audio-visual aids in geographical education.

The effective work of the Section has not been running, in fact, before the end of 1985. At that time, we have been able to deliver the first Newsletter (December 1985). The same mailing allowed us to send a preliminary survey form, in order to be able to elaborate a first global evaluation of geographers audio-visual aids uses around the world and to be present it during the coming meeting in Barcelona. The Newsletter editing and mailing is strongly supported by INTER-GEO, a laboratory of the french C.N.R.S, which regularly informs hundreds of correspondents through worldwide diffusion. This valuable aid will extend both to the international audio-visual survey report publication which we plan to present in Barcelona, and to the organization of audio-visual documents, films presentations during the Conference.

Since 1984, the french group has gone on with its work on the national level. A survey has been launched, on the present state of audio-visual in french geography. The main results of the survey are given in this paper. They have been presented and discussed during the first colloquium on "Geography and audio-visuals " which has been held on June 7, in Paris, under the patronage of the "Association de Géographes français". The first written theoric positions of some french geographers on audio-visual aids will be published by the Association within the next months. More generally, the group assumes many activities corresponding to the objectives that have been adopted in 1979:

- increasing exchanges of informations between geographers (meetings, films, catalogues, newsletter),

- theoric discussions and adequate research on specific geographic audio-visual productions and uses,

- adequate aids to realization and production, training schools for searchers (both:

theoric and technic).

opening to TV medias, promotion of geographers program projects

Some results have been already obtained. The first steps of our research are behind, and some young geographers demonstrate a real aptitude to realize attractive documents. TV begins to sponsore some of them. The training school, which is hoped to become a periodic, annual one (with frequent training days, in the intervals), has been performed in 1984 et 1985. Plans are made for 1986. The group is now assisted, for the public shows promotion by a "Comite du film géographique", which is closely linked to the "Société de Géographie de Paris". Efforts are made to provide the geographers a real autonomous capacity in the managment of their audio-visuals.

The papers gives detailed informations on these topics and on recent productions and projects. We hope the Barcelona meeting will be a fruitful opportunity to confront them with the ones of the many individuals or groups of other countries which are concerned by audio-visuals.

****

Le Groupe de travail " Géographie et audio-visuel " du Comité national de Géographie a été créé en 1979, à l'initiative d'un groupe de géographes désireux de contribuer au développement des aides audio-visuelles dans leur recherche, leur enseignement et, d'une façon plus large, leur communication en direction du grand public. La tenue d'un Atelier lors du Congrès International de Paris, en 1984, a été l'occasion d'une première manifestation de ce groupe auprès de collègues étrangers. L'Atelier a réuni plus d'une centaine de géographes venus d'une quarantaine de pays. Il a abouti à la creation d'une Section " Aides audio-visuelles à l'éducation géographique", au sein de la Commission de l'Education géographique, présidée par J.P. Stoltman.

Le développement des relations entre géographes de divers pays, en ce qui concerne l'utilisation des moyens audio-visuels, est soutenu depuis 1985 par la publication d'une Lettre d'information bi-annuelle, dont le n° 1 a été diffusé en Décembre dernier. Cette lettre d'information est realisee en liaison avec le Laboratoire INTER-GEO , laboratoire du Centre National de la Recherche Scientifique (CNRS), qui dispose d'un réseau de plusieurs centaines de correspondants dans le monde entier. INTER-GEO a assuré la diffusion de la Lettre d'information, mais aussi de l'enquête qui a été lancée à l'occasion du n° 1 et dont le compte rendu complet fera l'objet d'un rapport. Ce rapport sera au centre des discussions qui seront organisées par la Section audio-visuelle dans le cadre de la Conférence Régionale de Barcelone.

Depuis 1984, le Groupe de travail français a poursuivi son travail sur le plan purement national. Il s'est livré à une évaluation de la situation réelle de l' audio-visuel pratiqué par les géographes dans les Universités et Centres de recherche nationaux. Il a poursuivi ses activités propres, selon les axes qui ont été fixés en 1979:

- diffusion de l'information et développement des échanges,
- réflexion théorique et recherche en vue de la définition d'un audio-visuel spécifique, adapté aux besoins et aux possibilités des géographes;
- aide à la réalisation et formation des chercheurs dans les domaines de la théorie et de la technique;
- réalisation de documents audio-visuels,
- ouverture sur les réseaux de médias, contacts avec les télévisions, projets de réalisation en collaboration.

En outre, il a poursuivi la mise en place des structures qui étaient indispensables au développement de l'audio-visuel des géographes, en France, avec comme objectif d'obtenir une certaine capacité autonome de réalisation et de gestion. Le présent texte fait le point sur les resultats obtenus dans ces diverses directions, esperant qu'une confrontation fructueuse pourra s'instaurer avec les groupes existant dans d'autres pays.

resultats obtenus dans ces diverses directions, esperant qu'une confrontation fructueuse pourra s'instaurer avec les groupes existant dans d'autres pays.

I L'Audio-visuel français et la position des géographes (1985)

Les possibilités et les réalisations des géographes français doivent être évaluées selon un double point de vue par rapport à la situation générale de l'audio-visuel, en particulier de l'audio-visuel scientifique, qui prévaut dans ce pays, et en fonction de la place qui est reconnue à l'audio-visuel au sein de la communauté géographique.

La France connait en effet, depuis quelques années, comme l'ensemble du monde occidental, une veritable révolution médiatique, qui est avant tout une révolution des images. Mais la situation présente ici un certain nombre de particularités, tant au plan des structures que des techniques, et peut-être surtout des mentalités, qui font que l'audio-visuel est traditionnellement l'objet de débats très vifs, de choix parfois contradictoires, et de remises en question périodiques. Les conséquences de cette situation, particulièrement accusée depuis le début des années 80, sont qu'il existe des entraves permanentes au développement d'un audio-visuel à la fois totalement libre, qualitativement satisfaisant, et raisonnablement intégré à tous les niveaux de la société. Ces difficultés sont tout particulièrement ressenties dans le domaine de la communication audio-visuelle scientifique, parent extrémement pauvre de la communication grand public, dominée par l'information politique, économique, sportive, et distractive ou culturelle au sens large.

Dans la géographie en particulier, partie intégrante d'une collectivité universitaire longtemps orientée vers la formation d'élites enseignantes et vers la recherche fondamentale, la preéminence de la communication écrite reste très marquée. Les géographes ont pourtant adopté très tôt la photographie, et dans leur pratique de recherche ou pédagogique ils ont banalisé l'utilisation de la diapositive. On observe chez eux, à l'inverse, une très grande prudence devant les évolutions récentes de l'audio-visuel. Le poids de la technique, les coûts, l'importance grandissante de l'investissement à consentir en matière de formation, sont sans doute les raisons majeures qui font que beaucoup de géographes ne consentent pas l'effort nécessaire pour s'adapter aux formes modernes de la communication - prenant ainsi le risque de voir leur discipline se couper un peu plus de la société qu'elle est censée s'efforcer de comprendre et en même temps guider dans son appréhension des réalités géographiques. Sur toutes ces questions, le Groupe de travail s'efforce de réunir les informations indispensables, et de les diffuser en vue d'une réflexion collective.

I 1 *L'audio-visuel en France*

En 1985-86, la France est toujours en situation de " sous-développement audio-visuel" par rapport à nombre de pays anglo-saxons aussi bien qu'européens.

Dans le courant de 1984, il existait seulement 3 chaines de TV, toutes publiques, reçues sur tout le territoire, diffusant environ 30 heures de programmes par jour. Ces chaines etaient en principe autonomes quant à leur gestion et relevaient d'une Haute Autorité pour ce qui est de leur observation de certaines règles (financement, programmes...). Une très faible partie du territoire recevait des chaines étrangères: BBC1, deux chaines privées anglaises (Skychannel, Screenspot), RTL TV, RTV1 belge, 3 chaines internationales allemandes, TV Montecarlo. Les foyers reliés par cables à des têtes de réseaux étaient très peu nombreux (2 %).

En 1984-86, le "paysage" audio-visuel a progressivement changé. En Novembre 1984, une 4° chaine nationale, payante, est lancée (Canal Plus) : apres une période de mise au point, elle a dépassé le million d'abonnés. En 1984-85, les plages des 3 chaines initiales ont été augmentées (émissions du matin en particulier). Au début de 1986, une 5° chaine, privée, non payante, a été lancée, puis une 6° chaine publique, à vocation musicale. Ces deux chaines ont une audience encore tres limitée, pour des raisons aussi bien techniques que politiques. Mais le bouleversement du marché est à attendre de deux évènements dont les effets se feront sentir dans un tres proche futur.

Il s'agit

closes. L'introduction des images en provenance de l'étranger sera en outre renforcée par le lancement de satellites de Télé-communication qui auront pour objectif d'alimenter les têtes de réseaux câblés.

En Juin 1986, les structures même de la télévision sont l'objet d'une refonte très profonde: la privatisation de certaines chaînes, la redéfinition de la vocation de certaines autres sont en cours. Quelle que soit l'organisation retenue en fin de compte, la densification de l'information audio-visuelle dans les toutes prochaines années ne sera aucunement remise en cause. Les promoteurs des modifications en cours développent plutôt l'idée qu'il s'agit de moderniser le système pour l'adapter à la société moderne et à la révolution audio-visuelle.

A très brève échéance, l'ensemble du public, y compris le système éducatif et les réseaux scientifiques vont donc se voir confrontés à un accroissement considérable de l'information audio-visuelle. Dans le même temps, la demande de programmes de la part des chaînes se trouvera affectée d'un coefficient multiplicateur que les experts situent entre 2 et 10.

Les géographes se trouvent sollicités à un double titre: en tant qu'enseignants ou chercheurs, consommateurs d'images, et en tant que réalisateurs de documents et producteurs d'images. La question qui est posée est également double. Comment faire évoluer les méthodes d'enseignement et de recherche pour tirer le meilleur parti de l'afflux d'information audio-visuelle? Comment développer la part des géographes dans la conception et la réalisation de programmes de télévision?

A examiner les résultats d'une enquête sur les programmes diffusés par les chaînes françaises en 1984, on peut se demander si les scientifiques ne risquent pas d'être les premières victimes de l'explosion audio-visuelle, cette dernière favorisant démesurément la diffusion des films, du sport, de variétés, et dans l'ensemble, la production étrangère. Il n'en est que plus urgent de trouver, même au niveau modeste qui est celui des géographes, des réponses au défi qui nous est ainsi lancé.

1.2 *L'Audio-visuel scientifique français*

L'enquête réalisée par le Service d'observation des programmes audio-visuels (SOP, Paris) a porté sur les années 1981, 1984 et sur le premier semestre 1985. Elle est très instructive, si on en juge par le tableau suivant:

Chaîne	Année	Total heures de programmes	Programmes scientifiques	Ventilation médecine	biologie écologie	autres
TF1	1981	4346 h	85	25%	44%	31%
	1984	4670	150	35	15	50
	1985	-	66	28	25	46
A2	1981	4495	108	28	43	29
	1984	4653	55	45	54	1
	1985	-	27	51	48	-
FR III	1981	2028	13	55	33	12
	1984	2046	6	50	50	-
	1985	-	15	-	-	-

Les chiffres sont extraits de la banque de données des émissions TV, on a retenu les seules émissions de type documentaire (excluant le reportage d'information) dans le domaine des sciences exactes. On retiendra du tableau l'extrême faiblesse de la production télévisuelle d'émissions et de documents scientifiques relatant de grandes questions, des découvertes, ou faisant intervenir des scientifiques dans le cadre de débats. Cette situation est très différente de celle qu'on observe en Grande Bretagne ou en Belgique.

En ce qui concerne l'intervention des géographes sur les chaînes de télévision, elle est actuellement pratiquement négligeable. Une poignée de films tournés par les géographes apparaissent dans des émissions en général non scientifiques et quelques très rares géographes sont l'objet d'interview parfois relativement longues. Pourtant des structures existent qui devraient permettre aux géographes de réaliser des documents plus nombreux, de se faire connaître par les chaînes, et d'une manière générale de développer leur pratique audio-visuelle.

L'organigramme suivant regroupe l'essentiel de ces structures.

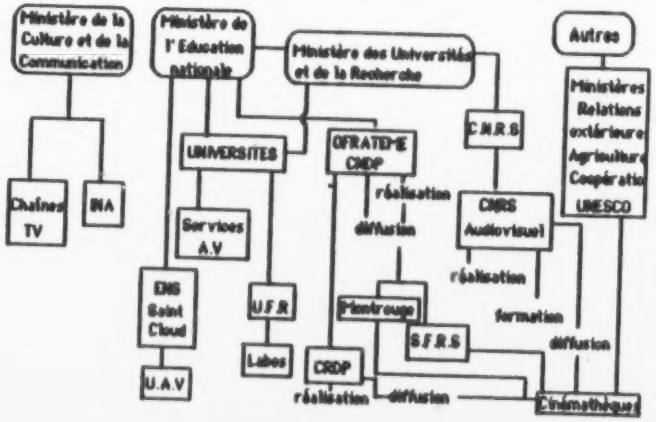


Fig 1 Organigramme des ministères et des services publics soutenant l'audio-visuel scientifique en France. Liste des sigles.

INA: Institut national de l'Audiovisuel, 193-197 rue de Bercy, 75 582, Paris.

ENS: Ecole normale supérieure, dont dépend l'U.A.V, Université Audio-Visuel, service de réalisation de documents audio-visuels.

UFR: Unités de Formation et de Recherche, regroupant divers départements dans les universités. Universités et UFR disposent de Services AV généralement bien équipés et de personnel. Les départements peuvent disposer d'équipements assez complets.

CNDP: Centre National de Documentation Pédagogique, 29 rue d'Ulm, 75 005, Paris. Le CNDP contrôle les Centres Régionaux de Documentation Pédagogique (CRDP) et les Centres départementaux (CDDP). Il existe des cinémathèques et vidéothèques à Paris et en province. Pour Paris, le centre de diffusion et de réalisation se trouve à Montrouge, 21 Rue de la Vanne, Montrouge Cedex, BP 359.92 541.

SFRS: Service du Film de Recherche scientifique, 96 bvd Raspail, 75 272, Paris.

CNRS-Audiovisuel: service de réalisation et diffusion du CNRS, 27 Rue P.Bert, 94200 Ivry.

1.3 *Les géographes français et l'audio-visuel*

Compte tenu de la richesse de l'organigramme ci-dessus, il peut paraître surprenant que la pratique des géographes dans le domaine de l'audio-visuel reste à un niveau dans l'ensemble insuffisant. Il existe en effet un grand nombre de documents d'intérêt géographique, disponibles dans des cinémathèques et vidéothèques. Cette richesse a été démontrée par le premier Catalogue réalisé par le Laboratoire INTER-GEO, et publié en 1984. En tant qu'enseignants, les géographes français

peuvent en outre avoir recours à de multiples organismes (publics, privés) autres que ceux qui sont mentionnés plus haut. De même, pour la réalisation de leurs propres documents, ils peuvent recevoir un soutien financier et (ou)technique des Services A.V des universités, de la Direction centrale du Ministère des Universités, de l'U.A.V, du CNDP (Montrouge)et des divers CRDP (en province), du S.F.R.S, du CNRS-Audiovisuel la liste n'étant pas exhaustive. En outre, des co-productions sont possibles avec les chaînes de télévision, notamment la chaîne régionale FR III, et le recours au financement par des groupes privés n'est pas exclu.

En réalité, le tableau comporte de nombreux points d'ombre. Une des tâches du Groupe de travail a été d'essayer de discerner ces points d'ombre, à travers une enquête réalisée à la fin de 1985 et dont les résultats sont présentés plus loin. Cette enquête ne représente qu'un des aspects des activités du Groupe face à une situation sur laquelle le diagnostic suivant pourrait être porté:

- poids excessif des services publics ou para-publics, aboutissant à une gestion administrative de la diffusion et de la réalisation qui multiplie les délais, accroît les coûts et freine la production,
- dispersion et cloisonnement des diverses filières audio-visuelles, provoquant un émiettement des initiatives, favorisant les comportements individuels au détriment d'une action collective efficace,
- multiplicité et hétérogénéité des équipements, décourageant les échanges, freinant le suivi des évolutions techniques et la mobilisation durable des chercheurs,
- absence de véritable formation à l'image dans les cursus suivis par les géographes, entravant la réalisation autonome aussi bien que la collaboration avec les techniciens de l'image et du son,
- dévalorisation de l'image de marque de la géographie, plaçant les géographes en position défavorable vis à vis d'autres disciplines , exigeant un effort tout particulier et à court terme auprès des médias afin de les convaincre de l'intérêt des positions de la géographie.

En fait, le Groupe de travail se voit placé dans l'obligation d'affronter la situation actuelle de la manière la plus globale possible et d'avancer dans plusieurs directions à la fois.

2 Le Groupe de travail " Géographie et Audio-visuel"

Ces directions sont les suivantes: développement des échanges et de la cohésion dans le groupe des géographes sensibilisés aux problèmes de l' audio-visuel (programme de réunions enquête nationale), mise en place progressive de structures adaptées, organisation d'une formation (stages théoriques et techniques), recherches sur un audio-visuel spécifique des géographes (Colloque "Géographie et audio-visuel"), aide à la réalisation. Bien qu'une grande partie de la communauté des géographes semble considérer que " les géographes ont manqué, ou sont en train de manquer, au moins en France, la révolution de l' audio-visuel en dépit des efforts de quelques uns ( )ce qui, dans un monde de l'image est grave" (2), il est permis en 1986 d'envisager l'avenir avec un certain optimisme.

2.1 *L'enquête nationale de 1985*

L'enquête avait pour objectif d' essayer de saisir la localisation, les moyens, les réalisations passées et les projets des géographes qui, en petits noyaux ou à titre d'individus isolés, accordent dans leur pratique professionnelle une place significative à l'audio-visuel. Le questionnaire a été diffusé dans tous les départements de géographie, les laboratoires de recherche, ainsi qu'auprès d'organismes liés à la géographie. Le nombre de réponses exploitables a été de 51. Ont répondu en tant que tels 24 départements universitaires , 9 laboratoires et 6 instituts ou grandes écoles. 6 réponses, considérées comme individuelles fournissent des informations recoupant ou complétant les autres réponses. 12 universités n'ont pas répondu: les résultats de l'enquête devront être considérés comme provisoires, représentant une évaluation minimale du potentiel existant. Le groupe de travail devra réunir par d'autres moyens l'information manquante.

Le questionnaire comportait les rubriques suivantes: matériel AV disponible et accessibilité, utilisation effective du matériel, réalisations personnelles ou d'autres géographes appartenant à la même structure, niveau et souhaits de formation, commentaires personnels et propositions. On a comptabilisé les mentions (réponses positives) pour les diverses cases-réponses du questionnaire.

Les résultats sont les suivants:

- matériels: projecteurs diapositives (diapos-sons compris): 24 mentions
  projecteurs de films super 8: 8 mentions, 16 mm: 17
  magnétoscopes VHS: 16, 3/4 de pouce: 9

  Il est manifeste que les chiffres concernant l'utilisation des diapositives sont très inférieurs à la réalité. Significative par contre est l'importance prise par la vidéo, en passe de détrôner le 16 mm.

- accessibilité matériel d'accès très facile (dans le département): 17 mentions
  matériel appartenant aux services communs de l'université: 14
  matériel personnel: 8
  autres (associations, CRDP...): 5

  On est frappé du nombre relativement important des équipements présents sur les lieux d'enseignement et de recherche. Ces équipements sont parfois très sous-utilisés.

- utilisation de documents audio-visuels:
  diapositives et diapos-sons: 24
  16 mm: 14 (18 documents mentionnés, sans doute très inférieur à la réalité)
  super 8: 8
  vidéo VHS: 10 (32 documents mentionnés), 3/4: 3

  Le recours à des documents personnels concerne de manière systématique les diapositives et le super 8, beaucoup moins la vidéo (13 documents) et le 16 mm (1). Au total, une quinzaine de cinémathèques et vidéothèques sont sollicitées pour les 2 derniers supports.

- réalisation
  séries de diapositives éditées et diapo-sons: 4 mentions
  super 8: 2 mentions
  16 mm: 2
  vidéo: 8

  Les mentions concernent soit des réalisations personnelles, soit des réalisations d'autres collègues. Elles permettent de compléter le catalogue des réalisations déjà connues et surtout de dessiner une carte de l'implantation des groupes de géographes ou des géographes isolés qui constituent le potentiel actuel de l'audio-visuel géographique. Cette carte fait apparaître une très large dissémination sur l'ensemble du pays. Les pôles les plus importants sont, en dehors de Paris:
  l'ensemble Aix-Marseille-Avignon: 7 réponses (thèmes: géographie régionale, télédétection, milieux et environnement),
  Toulouse: 3 réponses de laboratoires réalisant régulièrement des documents (thèmes: villes et banlieues, environnement et risques naturels, Amérique centrale), avec des liaisons avec FR III,
  Nantes: équipe pluridisciplinaire, en collaboration avec FR III,
  Tours: laboratoire d'études urbaines au Maghreb (Urbama) et CESA (illustration de mémoires d'étudiants),
  Bordeaux (série de documents Bordeaux II sur les activités viticoles)

Amiens: 2 réponses (thèmes: géographie urbaine, environnement),
Limoges (documents de géographie rurale en vidéo 3/4).

Par ailleurs, des géographes ont réalisé (ou ont en projet) divers documents à Reims (films super 8 sur la problématique géographique et la géographie urbaine), Saint-Etienne (film sur le Rhône), Rennes (essais en climatologie), Nice (diapos-sons), Lille (diapos-sons), Nancy (diapos-sons), Grenoble (films sur la montagne, les avalanches).

- formation :

Une absence totale de formation est mentionnée 15 fois
L'existence d'une formation est mentionnée 5 fois
Dans la formation souhaitée on relève les réponses suivantes:

formation couvrant tous les thèmes: 1
. formation technique: au super 8: 8
au 16 mm: 3
à la vidéo VHS: 14, 3/4: 6
formation à la lecture de l'image 8
formation par la critique de films: 10
. recherche sur un AV des géographes spécifique 13

- commentaires , propositions

Une seule mention est faite, en ce qui concerne les obstacles au développement de l'audio-visuel en géographie, des problèmes de financement. Deux autres obstacles sont beaucoup plus ressentis. Il s'agit, d'une part, de la lourdeur matérielle de la préparation des séances audio-visuelles, liée à l'absence ou la difficulté d'accès à des salles convenablement équipées, d'autre part, de l'importance des stocks de diapositives dont disposent beaucoup de géographes et qui les dispensent de mettre en oeuvre des techniques plus modernes dont l'efficacité ne paraît pas décisive. Une proposition revient d'ailleurs sur cette question. Elle suggère d'intégrer la diapositive dans le domaine des recherches et de la promotion lentées par le Groupe de travail. D'autres propositions portent sur les moyens possibles d'un accroissement de l'efficacité de l'audio-visuel (amélioration des conditions d'emprunt ou d'échange, importance des séquences d'animation) et surtout sur la nécessité de suivre les développements technologiques en cours (images artificielles, banques d'images et vidéo-disques).

Certains commentaires vont plus loin. Ils envisagent les facteurs les plus profonds des difficultés d'adaptation des géographes à une société et à un enseignement audio-visuels. Ces difficultés touchent à des orientations fondamentales de la pensée géographique française, et à des attitudes collectives très solidement ancrées. D'une part, il faut évoquer la distinction traditionnelle entre la fin et les moyens, la pensée conceptuelle et les techniques, distinction qui a ses mérites, mais qui contribue à faire sousestimer et par conséquent à faire tenir pour subordonnées ou négligeables des méthodologies et des technologies modernes, en dépit de l'impulsion majeure qu'elles sont capables d'insuffler à la société et au système scientifique et éducatif. D'autre part, pour la quasi-totalité des géographes la prééminence de la recherche dans l'activité universitaire, et de l'écrit dans la communication des résultats de cette recherche sont un fait établi. La communication passe prioritairement par la rédaction d'articles dans des revues sérieuses et de thèses toujours très lourdes. Il en résulte que nombre d'entre eux écartent la communication audio-visuelle comme étant, soit impossible à aborder convenablement et inévitablement marginale, soit en contradiction avec d'autres activités prioritaires et par suite tenue pour un détournement d'activité.

Sur le fond, il est clair que la modernisation des modes de communication en géographie sera une tâche de longue haleine. Elle implique une évolution progressive des mentalités et des

comportements. Elle suppose l'existence de structures durables, adaptées, facilitant les échanges, la réalisation de documents, les séances de projection et de discussion, la formation technique et théorique, la recherche et les contacts avec les médias grand public. Par une sorte de paradoxe, il semble que l'évolution de la communauté des géographes pourrait aussi passer par un large recours du Groupe de travail à la communication écrite pour diffuser ses idées, et par un large retour à la diapositive, support d'information et moyen de communication qui est aujourd'hui totalement intégré dans la pratique de la plupart des géographes.

2.2 *Structures, formation, recherche et réalisation*

Structures

Les géographes français disposent en 1986 de trois stuctures poursuivant chacune des objectifs spécifiques.

1. Le Groupe de travail (Responsable: L. Faugères) est une émanation du Comité National de Géographie, et, à ce titre, est présent dans les Journées géographiques annuelles, organisées par le C.N.G.

Il assure la continuité des activités du Groupe, diffuse une Lettre d'information à périodicité non fixe, organise des séances de projections de documents en liaison avec le Laboratoire INTERGEO. Il est responsable d'activités de formation et de recherches, organise des colloques (premier colloque national en Juin 1986).

2. La Section "Aides audio-visuelles à l'éducation géographique" de la Commission "Education géographique" de l'UGI (Président: L. Faugères) a pour objectif d'échanger des informations entre géographes de divers pays et d'organiser des manifestations dans le cadre des réunions de l'UGI.

La section diffuse une Lettre d'information auprès de plusieurs centaines de géographes. Des activités sont prévues à Barcelone: discussion des résultats de l'enquête internationale sur l'audio-visuel, projection de documents, réalisation de documents sur la Conférence régionale.

3. Le Comité du film géographique (Président: Cl. Collin-Delavaud) a été créé en 1985. C'est une Association (loi de 1901) qui dispose de l'autonomie sur le plan juridique, peut percevoir des cotisations, recevoir des subventions et des dons.

Il a pour mission de promouvoir les documents de géographes en direction d'un large public, d'établir des contacts avec les chaînes de télévision, et d'étudier les possibilités de co-production. Il organise des séances de projection dans la salle de la Société de Géographie de Paris.

4. Un effort a été fait au cours des dernières années pour obtenir la reconnaissance des activités du Groupe de travail par le CNRS, sous la forme d'une équipe de recherche pouvant recevoir un financement propre, du personnel. La reconnaissance d'une telle équipe est le dernier élément qui reste à obtenir: on pourra considérer alors que l'ensemble des structures indispensables pour la promotion de l'audio-visuel en géographie est en place.

Formation

Le groupe de travail organise chaque année un stage de formation d'une durée d'une semaine, avec la collaboration du CNRS-Audiovisuel. Le stage comporte des aspects théoriques, techniques, et une initiation à la réalisation. Une quinzaine de jeunes géographes sont répartis en 3 ou 4 équipes qui amorcent la réalisation de documents en super 8, 16 mm, vidéo VHS et 3/4. Dans l'intervalle des stages, la réalisation est

poursuivie et des journées spécialisées sont organisées (écriture cinématographique, préparation d'un film, son ...)

Le stage de 1986 devrait être consacré à l'évaluation des possibilités de la vidéo 8mm et s'étaler sur 10 jours, dont 3 consacrés au montage.

Recherche

Un des objectifs du Groupe est de promouvoir une recherche destinée à donner naissance dans le futur à une théorie du cinéma de géographes. Cette recherche s'appuie sur une analyse critique des documents déjà réalisés par ceux-ci, s'efforçant de mettre en relief leurs motivations, de dégager la spécificité de leurs tentatives, et de fournir une esquisse de doctrine pour les réalisations à venir. Mise en scène de l'espace et de situations, analyse de la complexité, saisie d'évènements et de processus, suivi d'évolutions, à des échelles de temps quelconques, paraissent devoir être les temps forts ou les modes majeurs de l'expression audio-visuelle des géographes. Mais la recherche par ceux-ci d'un langage spécifique passe naturellement par l'assimilation et la critique des expériences qui ont été menées par les cinéastes, par les cinéastes du réel, du documentaire, bien entendu, mais aussi par les cinéastes de la fiction. Cette recherche ne fait que commencer.

Le colloque organisé à Paris, dans le cadre de l'Association de Géographes français (AGF) le 7 Juin 1986, en a donné une première expression publique. De nombreux documents ont été présentés, qui ont fait l'objet de discussions quant à leurs objectifs initiaux, les conditions de tournage, les techniques utilisées. Le lien avec les géographes étrangers a été assuré grâce à une présentation des documents vidéo réalisés par A.Buttimer (Université de Lund, Suède et Clark University, Worcester, USA). Le colloque a été aussi l'occasion de montrer qu'une analyse critique de la diapositive, considérée comme moyen de communication autant que comme support d'information, pouvait enrichir notre recherche.

Réalisations

En 1985-86, des documents ont été achevés, ou mis en chantier. D'autres sont au stade de projets très avancés. Leur nombre est très encourageant.

- films achevés :
  - Thibet (Cl. Collin-Delavaud, super 8 et vidéo, Paris)
  - Le Rhône (J. Bethemont, 16 mm, Saint-Etienne)
  - Pixels et paysages (F. Verger, 16 mm et vidéo, Paris)
  - Entre la terre et l'eau. La baie de Bourgneuf (JP. Corlay, vidéo, Nantes)
  - Pathologie du paysage (Ph. Pinchemel, 16 mm, Paris)
  - Les mines d'or romaines d'Espagne (Domergue, Hérail, 35mm, Toulouse)
  - La catastrophe ordinaire (J.P. Métaillé, 16 mm, Toulouse)
  - Islande (L.Federmeyer et collab., 16 mm, Paris)

- films en cours de réalisation :
  - Macédoine : le coût du développement (L. Faugères, vidéo et 16 mm, Amiens)
  - Paris, la jungle (L. Faugères, 16 mm, Amiens)
  - Rivières souterraines de Paris (Cl. Collin-Delavaud, 16 mm, Paris)
  - Islande (L. Federmeyer et collab., vidéo, Paris)

Les bâtisseurs (J P Métaillie, 16 mm, Toulouse)
Terrasses de Mantes (P Merra et B Boudassou, vidéo, Paris)

- films en projet

Paris et banlieue (B Lévy et F Pusey, 16 mm, Paris)
Forêt pyrénéenne (J P Métaillé, Toulouse)
Vaucluse (J Riser, vidéo, Avignon)

Cette liste n'est pas exhaustive. En multipliant les réunions et les échanges, le Groupe de travail espère réduire rapidement les oublis. Dans les années à venir, une information comparable sur les productions des géographes de pays étrangers devrait être progressivement réunie par la Section " Aides audio-visuelles à l'éducation géographique ". La diffusion de cette information pourrait être la première étape vers l'établissement d'un réseau d'échanges et d'une collaboration internationale réelle des géographes dans le domaine de l'audio-visuel.

L Faugères

Bibliographie

J Burgess , J R Gold and collab. Geography The media and the popular culture. London, 1985, Edit Billing and sons Worcester. 271 p.

A. Buttimer. Invitation to Dialogue. Video-recorded interviews and discussions transcripts publications. Lund University Central Library. 1985. 87 p.

Colloque A G F "Geographie et audio-visuel" Textes de L Faugères, Ph Pinchemel, Cl.Collin-Delavaud, A.Buttimer, L.Federmeyer, J.P Corlay, P.Merra. Fiches techniques des films présentés. Juin 1986. Sous presse.

D.Davidts. Aspects quantitatifs de l'offre télévisuelle en France en matière d'émissions scientifiques. Carrefour international de la communication. Paris, 1985. Inédit.

L. Faugères. Moyens audio-visuels dans l'éducation geographique. Rapport sur l'Atelier 31 in Actes du XXV* Congrès international de Géographie, Paris, 1984 pp 146-148.

A study of the map drawing ability of secondary school pupils between the ages of 12 and 19.

Philip C Stimpson. Dept of Professional Studies in Education, University of Hong Kong

ABSTRACT

The variation in map drawing performance of 124 secondary school pupils is examined with respect to age, gender, subject steam and level of environmental awareness. Four map types on a continuum of increasing sophistication and level of performance are identified. These are: 1. plan-verbal with a high degree of intra-cluster accuracy, 2. plan-verbal with occasional pictorial elements and a limited awareness of scale, 3. pictorial-plan-verbal, and 4 pictorial. The proportion of Type 1 generally increases with age, but Type 4 remains constant. The increase of Type 1 with age is as expected given progressive selection of the most able pupils. Thus little development of map drawing ability seems to take place in the upper years of the study school. Variation within year groups is not straightforward. The performance of boys is more variable than that of girls. Boys dominate the drawing of Type 1 and Type 4 maps, and generally perform better than girls, this being most noticeable in early years. Little difference is found between pupils who do and do not do geography, and between science and arts pupils. Pupils who drew Type 4 maps exhibited limited environmental awareness, irrespective of year group. Type 1 maps were associated with the widest awareness, however there was little difference between pupils who drew Types 2 and 3 maps. Larger scale studies, embracing a wide range of map and pupil attributes, are needed to understand the relationship between pupil attribute and mapwork ability more fully. Until this is done, there is the continued danger of a mismatch between pupil capacity and teacher expectations. It is therefore suggested that the IGU, perhaps in conjunction with an organisation such as the IEA, act as a co-ordinating body for more comprehesive studies to ascertain more clearly the spatial understanding and mapwork abilities of secondary school pupils.

Key words: Map drawing, Cluster analysis, Age, Sex, School subject, Environmental awareness.

Dr. Tatjana Ferjan

Work with Geographic Literature at Lessons

Due to extraordinary dynamics in life and to fast changes in environments geographic literature is, besides text books, becoming indispensable at lessons. Text books are composed in the way to comply with didactic and psychological principles, however they are not the only source neither the decisive didactic means. At lessons also other geographic literature is used, with richer texts than they can be found in text books. As these texts clarify problems also from other points of view they attract pupils very much.

The purpose of text book is to make the pupils acquainted with basic elements, thoughtfully and formally represented by synthetic summaries. As the first professional literature it helps the pupils to a scientiphic conception and opens them the way to other professional literature. The aim of up-to-date geographic lessons is to make the pupils acquainted with subject matter in the way to evoke ther capabil ity for discovering of unknown world or of unknown problems in a well known country. Starting from this idea, the importance of application of geographic literature at lessons is clearly evident. When, where, and how to use this literature depends on many environments, the lesson itself, methods, and forms of work. By application of certain geographic literature pupils are given broader sources of information at group lessons, programmed and semi-programmed lessons, while at frontal type of lessons they are successfully motivated for selfeducation. Work with texts has to be systematically perfectioned. At frontal type of lessons this is carried out directly under the teacher's guidance during a lesson and it is managed according to a plan. In order to achieve active comprehension of texts, the pupils have to be prepared in advance either by discussions on the subject matter or by refreshing of the necessary experience. After having read a passage the text has to be discussed with pupils. Texts or passages of texts may serve as basic or additional source of information.

At frontal type of lessons, where texts are applied at all stages of the teaching process, most of pupils are positively motivated. They like this method, because they get familiar with passages from other books, and as they are given new possibilities for consideration and conversation with the teacher. It is also important at such work to parallelly apply materials in pictures, such as charts, special charts, drawings etc. Of course pupils are not expected to know all the subjects, read texts or passages from various books. The elements essential for further comprehension may be sketched on the blackboard and in the pupils' note-books. It is important to evoke at pupils interest in such books so that they get used to choose a book also by themselves and to read it for their own satisfaction and pleasure. At reading they certainly meet inknown problems, which leads them to asking questions during next lessons and further it leads into a discussion between pupils and teachers. Thus pupils acquire knowledge that is more permanent and inobtrusive.

Work with texts and with geographic literature can also be performed indirectly. according to the teacher's instructions, or the pupils choose literature by themselves and the teacher checks the results. Pupils work with texts at group lessons, programmed, and semi-programmed lessons.

At group lessons adequate information sources have to be applied. Pupils are devided into groups, each group having a certain task. Pupils get instructions for work with text. Groups read silently. All pupils are occupied taking into consideration individual capabilities and interests. Such lessons are attractive to pupils as they come directly in contact with the book, with the text and later, as they have to report by themselves. Thus they are given the possibility of selfeducation.

At programmed and semi-programmed lessons information is given textually in certain subject units. The other possibility is that pupils themselves find information in a passage from a book which helps them solve the set task. At programmed lessons texts represent an important source of information. Pupils work independantly, they choose their own rythm of work, but all pupils have to go through all the subject units. Information may

be either direct of it is already comprised in the unit, or indirect if it only orients pupils to a certain source of information - to a text.

At group lessons, lessons in pairs, at programmed and semi-programmed lessons text. passages from scientiphic or popularly-scientiphic books are applied. With correct methodical treatment of these texts pupils get used to independant work.

Literature can also be used by the pupils indenpendantly, to help them elaborate papers or at work at different courses. First they are given the teacher's instructions, whereupon they may read even more complex passages. This, of course, depends on their capability, preliminary knowledge, interest in the subject matter and diligence. Thus pupils pass from their first professional literature, ie text book, to a wider range of geographic literature and they start to study unknown problems by themselves. Pupils like to use literature especially due to the accompanying illustrations and various maps. Pupils have to get used to parallelly apply and understand texts as well as pictures and graphic material.

The method of work with text has proved positive at various types of lessons. At pupils it develops all kinds of thinking: informative, productive, reproductive, and estimative. It gives the possibility to develop the capacity of critical thinking. To pupils it opens the broad access way to literature. It gives the possibility of selfeducation. Work with geographic literature brings variety to lessons, motivates the pupils, gives a vivid picture about many problems, offers an insight into countries that we cannot see directly.

Pupils like to work with geographic texts. This method can be combined with other methods, which even increases the siccess of application of literature.

ADAM MICKIEWICZ UNIVERSITY
QUATERNARY RESEARCH INSTITUTE
ul. Fredry 10, 61-701 Poznań, Poland
tel. 593-27

Dr Janina Idziak
Geographical Education

Optimizing the teaching of geography by pictorial education.

New ideas in the didactics of particular subjects develop due to the inquiring attitude of experienced teachers during their long school practice.

For 15 years of my own school practice and when observing many geography lessons conducted by other teachers, I have always been interested to find out the causes of the declining interest in geography, both among pupils and teachers. The process has affected not only Polish education, but also that of several other European countries.

The educational values that geography can boast oblige us to keep it among the basic school disciplines. Geography makes it possible to develop cognition to a great extent, and it coordinates and systematizes problems of various disciplines in a scientific way. It develops diverse abilities, in particular visual perception. It has a pedagogical impact, as it teaches the joy of discovering and studying, and allows experiencing various impressions and emotions.

As a school subject, geography makes use of spoken, written, numerical, and graphic types of language. None of them is more important than the others, but they all should be adapted to the needs and goals of teaching geography.

The observed reason for the indifference towards geography on the part of pupils and teachers are overloaded syllabuses and manuals.In the situation there should not be a domination of spoker and written languages over the remaining ones. Graphic language,so abundant in forms but simple and concise,can function in geography as a filtre eliminating information noise.It introduces photographi techniques, diagrams and maps into school teaching.Due to its subject matter geography develops the ability to use the graphic language.Cartographic techniques, analyses,landscape representation, work with photograghic pictures,photointerpretation of aerial photographs, the elaboration and analysis of diagrams, all require the ability to read and use graphic language.According to Piaget, these ablilties should be developed as soon as possible, in accordance with the stages of intellectual developmen of a child.

In my work at school I have noticed a great need for pictures in teaching,especially with topics in geomorphology, topography and cartography.Further observations have convinced me that the pictures that are most useful in didactics,particularly in the development of spatial imagination, are those that represent the reality most closely,that are colourful,explicit in their contents, well-suited thematically, and perfectly matching a concise text. The text can be explanatory or descriptive, it can guide observation or pose a problem thus inducing pupils, with the help of questions, to seek their own solutions.A full matching of a picture and a text will take place in the case of a colour, three-dimensional/spatial/ slide based on a previously determined scenario, because the three-dimensionality implied in the text is directly perceived from the picture.I could learn from practice that not all pictures are explicit and easy to read.When the child has no field experience,

no impressions or correct images of its own, then graphic language, especially black and white, two-dimensional pictures seen from too long or too short a distance,becomes difficult and hard to understand.The pupil cannot understand and read a map correctly, and he sees little in slides.

A child should be taught graphic language on the basis of its own impressions and experiences.This is made possible by a three-dimensional picture, as it allows a direct experience of distance, shape and the whole abundance of details that fill space.The visual sensation of space is a pleasant discovery for the pupil, full of joy and emotion.Visual activity is followed by an intensified mental activity.Pupils tend to draw their own comparisons, make analyses and evaluations, and retrieve the covered material much easier.

The above effects were observed during research in which an experimental group was taught with the help of colour stereoscopic slides.[1]

In the control group pupils watched flat,two-dimensional pictures while studying the same topics as the experimental one. Since they did not receive spatial impressions,they were unable to use spatial images during classes.Practice with a map supplied a particularly clear example.The plasticine models of positive and negative land forms made by the control group on the basis of a contour map and a flat aerial photo of the terrain were not very

---

1.For lack of space the description of the experiment is omitted. It was conducted on a sample of 132 pupils and included 3 topics. 28 500 answers and 1056 models were analysed.The results were submitted to statistical analysis.

faithful and sometimes even erroneous.By contrast, the experimental group,who had seen the same forms in a three-dimensional aerial photo, modelled them from a contour map quickly and correctly. Given the same time interval,it was possible to cover much more material in the experimental group than in the control one.Since the shape of a form is often connected with its origin /e.g.dunes/,the pupils from the experimental group,where three-dimensional observation was made,could understand problems more easily, and their retention was quicker and of longer duration.

As an effect of the experiment with the application of three-dimensional pictures in teaching,the following advantages were recorded in the experimental group in comparison with the control one:

- the increase of knowledge within the discussed topics by 22%
- the level of the understanding of phenomena improved by 12%
- the retention of knowledge increased by 22 %
- the accuracy of spatial images improved by 17 %.

On the average,the didactic results in the experimental group were better by 20 %.

The experiment allowed some additional conclusions to be drawn:

1.In order to teach the pupil a correct interpretation of land forms on the map he should be shown a stereoscopic picture of them with contour lines marked directly on them.

2.However,pupils' memory retains better the shapes of land forms observed on stereoscopic pictures without contour lines.Therefore, when acquainting pupils with the morfological features of a terrain with the help of three-dimensional,colour aerial photos, one should not obscure the pictures by contour lines.

3.The syllabus of geography should include,in the map knowledge component, colour stereoscopic slides as the missing link in the proper development of the spatial imagination of pupils.

The application of three-dimensional pictures with a text described above is a version of the popular Japanese "videotext" simplified to school conditions.

Bibliography:

1.M.Capel,A.Luis,L.Urtega, La geografia ante la reforma educativa,Geocritica,nr 53,Septiembre 1984, Catedra de Geografia Humana, Facultad de Geografia e Historia,Univetsidad de Barcelona.

2.J.Idziak,Wpływ obrazu stereoskopowego na efekty dydaktyczne w procesie nauczania geografii,Poznań,1978.

3.W.Pietsch,Stereofotografie,Halle/Saale/,1959.

ENHANCING VEGETATION APPRECIATION: CLASS PROJECTS FROM SAN DIEGO STATE UNIVERSITY

Barbara E. Fredrich
Associate Professor
San Diego State University

Over the past several decades there has been expressed concern relative to the condition of the earth's ecological systems and the survival of the human species in much-altered environments. Consequently, the discipline, biogeography, has emerged and has been integrated into undergraduate curriculum in geography, providing a linkage between physical and human geography in a holistic context.

While plant geography is an acknowledged essential component to biogeography, it is often difficult for the individual student to grasp the subject matter. Not only does there exist a fear of Latin binomials, but also more importantly the very enormity of species' listings for even a small region can leave the average student baffled and dumbfounded, in short, unable to relate to the subject material.

To reduce the great complexity of the plant world to more understandable proportions and yet render it intellectually palatable has been the aim of many biogeographers. It is with this purpose in mind that I apply my techniques based on five year's experience with non-biologically trained geography students from a United States University over a sixteen-week semester period. Over that period of time, I have developed some strategies which I believe to be effective techniques by which awareness of the environment, both in terms of vegetation formation and species' patterning, can be enhanced. While the specific circumstances may

differ from classroom to classroom and university to university, I present ideas which are worthy of consideration for possible integration and implementation in course curriculum.

First, there are several givens which may not be applicable in an international context, but certainly are the rule for Southern California. For one, the vast majority of students are employed on weekdays and weekends. Thus, it is essential to carefully plan field trips with ample lead-time and a general list of items to be routinely taken into the field; this may include field equipment such as compasses, abney levels, micro-recorders, meter sticks, first aid boxes, and appropriate apparel. Second, many students may not have experienced the collection of raw data, and in fact, may have an imperfect (rather ambiguous) understanding of the principles of scientific methodology.

Notwithstanding these contingencies, I propose a model of analysis, in part borrowed from Professor Jonathan D. Sauer of U.C.L.A.'s Department of Geography, to demonstrate patterns and processes involved in vegetation analysis. This conceptual framework is provided in the diagram which follows (slide 1).

Typically, a general analysis of vegetation begins with a consideration of environmental factors which influence vegetation patterns and is followed by a description of major world vegetation formations usually beginning with the tropics or areas of great complexity and terminating in the polar realms or areas of little diversity relative to species or life-form. This procedure I find to be appropriate and adequate because students must reckon with broad descriptions and generalizations relative to the physiognomic character of each formation. The report, however, is static. To continue the description with an increased level of logic, one can interpret the

environmental factors which influence the distribution of the formation. Herein the primacy of climatic factors is emphasized while noting that those elements which may be important in the explanation of the northern boundary may, in fact, be less significant in the explanation of the southern boundary and so on. If climatic factors do not appear to be the primary factors, then edaphic physiographic, or biotic factors may provide additional insight. Students are encouraged to use appropriately-scaled maps of climatic elements, edaphic features and topographic features to ascertain which factors appear to be most significant in the explanation of the distribution of the formation in question.

To create a dynamic view of the vegetation formation, some consideration of historical processes is postulated. Clearly this represents the linkage between vegetation analysis and human geography. Themes such as the desertification of major world regions, Africa, for example, or deforestation of the Amazon provide insight relative to the nature of human occupance on this earth and suggest future trends. More important, this process may allow the student to question the basic tenet in vegetation analysis, the concept of plant succession and climax vegetation formation.

Furthermore, analysis of as many different world vegetation maps as feasible, allows the student to deduce differences in criteria utilized in the determination of major regions by the various authors. This task can be accomplished by bringing a variety of maps to the classroom and requesting an analysis of features within a given time frame, or example ten to fifteen minutes, by designated groups of students. The process activates the intellect and generates discussion among students.

I think students should have an opportunity to investigate and ascertain the quality and quantity of vegetation maps at a regional scale. Thus I require that each student conduct library research on available vegetation maps of a selected world region and then generate a bibliography of maps including author, scale, date of publication, format, i.e., physiognomic with floristic subcategories, specific and/or unusual features. Individually, in a class presentation, they are requested to bring exemplary good and poor quality maps of the determined region. In addition, they must justify their choices in five minutes to their peers and the instructor. This aspect of the project results in considerable dialogue among students relative to the utility of the maps for environmental planners, land developers, agriculturalists, etc.

The dynamic interpretation of vegetation formations involves the consideration of the processes of migration and evolution. Herein the student begins to appreciate the effects of the Pleistocene, for example, on major vegetation formations.

It has been my experience that most students encounter difficulty in understanding the characteristics of world vegetation, especially without personal experience in each of the respective biomes--despite the use of slides, films and other visual aids. Consequently, I have found it useful and rewarding to introduce students to analysis of species patterning on a sub-regional level. There are many sources of natural ranges of plant species; among the most useful is the Atlas of U.S. Trees which depicts species patterns for hundreds of tree species. I simply select two or three examples, without reference to common or Latin binomials, and allow student groups to have about 20 minutes to ascertain which factors, excluding potential human modification, influence the distribution of species X. They

must defend their explanations to the class and suggest methodologies to test their contentions.

Two previous experiences with analysis of environmental factors prepares the student for the final major task of the course. By this time, the class has been divided into three or four groups of five persons. Each group elects or selects a captain who is in charge of all major communication to and from the group and is responsible for organizing additional fiel ork and seeing to it that the final project is presented and completed in the appropriate time frame.

Each group is given a distinct species with which to work. I select these species on the basis of their ease in identification by inexperienced geographers; thus I avoid consideration of species for which there is some difficulty in identification or which may be endangered endemics. Furthermore, owing to a strongly urbanized county, I select examples of both native and exotic species with which to study. Over the past three to four years, I have found that species lists would include exotics such as Datura meteloides (slide 2), Ricinus communis (slide 3), Nicotiana glauca (slide 4), and Tamarix pentandra (slide 5), natives include Encelia californica (slide 6), E. farinosa (slide 7), Opuntia spp. (slide 8), and Dudleya spp. (slides 9, 10).

Students are introduced to these species via slide sets and fresh plant specimens observed in the classroom. Finally, they are taken to the field sites where they learn to observe,describe, and measure the species (slides 11, 12, 13).

Fortunately, for much of southern California, distance to the field for studying plant species is minimal and does not require a great length of time or money on the part of students. For example, within about five

minutes drive from our university campus, solid stands of coastal sage and chaparral can be encountered (slide 14). In these natural settings students learn techniques such as quadrant analysis, line intercept method and use of the abney level and compass. At least one full day is spent in the field with each group. During the following few weeks, students write a brief research proposal, stating the following: 1) identification of a problem; 2) identification of a research question; 3) statement of a hypothesis; 4) statement of methodologies to be employed; 5) statement of expected results. A summary of each group problem is presented in written form or on the blackboard. At least one hour is spent in the review and discussion of each point. The entire class is expected to participate; the process enables them to learn to think critically and logically.

During the fifteenth week of the semester the final oral and written reports are presented. Students are given evaluation forms on which they assess each other's and their own oral reports (slide 15). There is a final meeting of each group with me where I assess the report. Frequently, as a portion of the final examination process, I pose an essay question in which the student must evaluate the methodology and results of his/her group's project. This activity may represent a veritable challenge to those who participated half-heartedly in the research; others might consider it an easy task, which indeed it would be for those who participated in the project from its inception to its conclusion.

It is to be emphasized that the processes and procedures described herein continue to be modified. A semester-to-semester variation in student/group ability requires an on-going assessment which provides evidence of common problems and suggests means by which they can be resolved. In this context, both instructor and student are challenged in the experience of learning.

Hartwig Haubrich

Geography for International Understanding
- a World Perspective.

The problem:

What is the current world-situation?

The distances are shortening,because the communication systems are becoming faster and faster.Therefore the information about other nations and the contacts are more and more increasing. We are living in "One World",on the "Spacelab Earth" or in a "global village".We - i.e.the mankind - share more or less the same fate.If "nation" means "sharing the same space,history and fate",could'nt we think we are going to build one world nation?

What are the current world-dangers?

Segregation of nations,poverty,hunger,analphabetism,ecological crises,regionalism,centralism,economic crises,cold war and limi of growth are common features of today and a nuclear war even with the end of the world is a possibility of our future.

What are the chances of the mankind?

Cooperation of all nations on the basis of a just world order is the chance to save and improve our future.Then the exchange of goods and ideas could improve our economy,moral and culture, education ,social and political systems as well.

The basis for banning the dangers and taking the chances in order to build a future "world nation" is:

International Understanding!

Aims and objectives for international understanding

In order to teach children world awareness and international understanding teachers should be conscious of the following aim and partly overlapping objectives.

Aim: to be able and ready to learn about nations in our "One World" in order to understand them and to cooperate with them.

Objectives

Knowledge-Objectives:
to understand current problems and future chances to build a humane world for all nations

Skill-Objectives:
to develop skills to collect, evaluate and use information about other nations, to criticize bias, ethnocentrism and prejudices and to see the cooperation possibilities of the nations

Attitudes and Values-Objectives:
to have respect to the "genre de vie" of other people, to analyse their actions and to be ready to cooperate with people of other cultures, races and nations peacefully

These objectives can be used as essential education principles in the whole schooling but also lead to concrete teaching and learning activities I will speak about now. But my main interest is to show the teacher the difficulties and chances to teach international understanding.

Knowledge for international understanding

In an article of the committee on Geography and International Studies(1982,p.3) of the Association of American Geographers about "Geography and International Knowledge" one can read: "Geography can contribute to an informed world view and thus to a favorable international climate for the peaceful settlement of disputes and for productive measures to ameliorate many world problems".If that is true we should have enough time to teach Geography and a kind of Geography which actually develops a global awareness.But many reserach results(Saveland 1984,Stoltman 1984, Niemz 1984)show an alarming lack of knowledge of students about the world.Of course it is true if we do'nt know anything about a nation we cannot like it.Hill(1981 p.239) found a positive correlation between the number of courses taken in geography and the amount of geographical knowledge.He meant that Geography "makes a disproportionally high contribution for students' global understanding"(Hill 1981,p.244).Rice did'nt found a positive correlation between geography knowledge and positive attitudes towards a nati8 He believes that the kind of geography is important:Human Geography and not pure Physical Geography could build a basis for international understanding and goodwill.But it seems also true that only few knowledge about foreign people produces an unsure feeling against it or even the probability of disliking it.Because it is a quite difficult task to teach international understanding I would like to ask for more Geography lessons and agree with the novelist James Michener:"The more I work in the social studies field the more convinced I become that geography is the foundation of all..I invariably start with the best geography I can find. This takes precedence over everything else,even history,because I need to ground myself in the fundamentals which have governed and in a sense limited human development...The virtue of the geographical approach is that it forces the reader to relate man to his environment..It gives a solid footing to speculation and it reminds the reader that he is dealing with real human beings who are just circumscribed as he"(J.Michener,197o,p.764f).When I agree with Michener I cannot agree with the many cutbacks of Geography teaching in many European countries.Integration of Geography in

a subject area also means shortening of Geography.Because it seems to be very difficult to show - especially politicians - the important role of Geography to contribute to better international understanding I would like to include this paper the following quotation of the Association of American Geographers:

1.Geography clarifies the interrelationships and associations in and among specific habitats on the face of the globe because it deals with the totality of human/land relations that require knowledge of natural resources and their physical and biological environments on one hand,and of societies,cultures,and economies on the other.

2.Geography portrays location and its significance on thematic maps that show more accuratelythan any other portrayel the important relationships to other places.

3.Geography focuses on how constituent parts of the world differ from one another in their associated resources,cultures and economies.

4.Geography studies how commodities,capital,ideas,and political influences move between and among nations.

5.Geography views the earth as a unit and puts individual countries,regions,and problems in a world context"(AAG.1982,1984).

Beside the time problem we have the curriculum problem.It is easy to ask for more knowledge to improve international understanding but it is difficult to answer the question about the kind of knowledge - regional geography,thematic geography,country after country or nation after nation-geography?The great number of states in the world makes it impossible to teach all.What are the selection principles?Neighbours first,the world powers,nations with which we have special - good or bad - relations,so called key nations,economic unions,political unions,1.,2.,3.world i.e. states of different developing stages or cultural continents and regions?There are a lot of important principles to choose geographic topics or nations but at the end there will remain many states which could'nt be included in the curriculum.But what about an overview - perhaps given by a famous geographer or another scholar of another disciplin.H.W.Elliott analysed the literature of such scientists.I will demonstrate here the example of the famous American geographer Ellen Churchill Semple who teached at the early part of our century at the university of Chicago.

Semple described the peoples of the world in terms of those factors she felt had influenced their development.[6] The most important of these were climate, proximity to oceans, population density, drainage systems, and natural resources. In her opinion, the north temperate zone exhibited seasonal variety that encouraged economic and cultural development. She portrayed the peoples of northern Europe as energetic, provident, serious, thoughtful, unemotional, cautious, and impulsive. China and its people rated compliments, although the Cantonese were more irresponsible and hot-blooded than their northern neighbors. Japan was the England of the East, bringing advancement in civilization and inaugurating the elevation of the whole of eastern Asia.

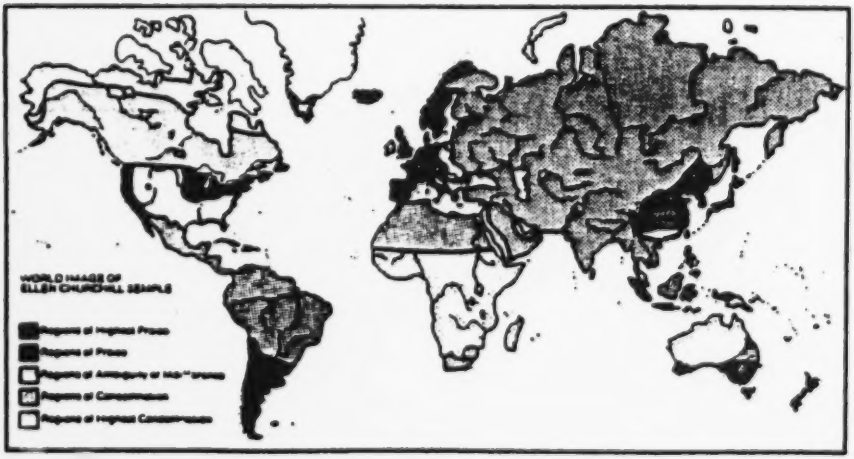
Tropical peoples were seen by Semple as servile and inferior. She believed that they had been subjected to economic and social retardation. High temperatures produced intense enervation, relaxed the mental and moral fibers, induced indolence, reduced conscience, and encouraged alcoholic cravings. The natives of central Africa were politically weak savages who had secured the will to erect states only from their conquerors. Additionally, the climate in southern Africa had transformed the skillful Dutch and French immigrant farmers into crude pastoral Boers.

Semple pictured the Arabs as a race of robbers who were equally addicted to theft and trade because of their desert environment. The inhabitants of southern Italy, feeling the relaxing effects of subtropical heat, were indolent, irresponsible, and improvident. The Turks were uncongenial and alien, and the people of India were ignorant and superstitious.

People living toward the poles fared no better in Semple's opinion. They had no culture and had been negligible factors in history. The peasants of Russia, for example, exhibited unsystematic, desultory work habits and were benumbed by the sloth of the far north. Russians, it seems, had been subjected to the retarding influences of Asia and touched by the melancholy of the Slav.

(H.M.Elliott,1979)

fig.: 1



(H.M.Elliott 1979)

H.M.Elliott drew the following mental map recording all evaluative statements and grouped them into 5 categories(see map!)."The Greeks are the best people of the world" is an example for highest praise, "The German are bad people" - an example for condemnation;"The French are a highly cultured people,but they are arrogant and wicked" belongs to the intermediate category "ambiguity or indifference". Ellen Churchill Semple's world image reveals a number of biases against people and countries,it shows a gradation of highest praise and praise around England and the United States to descending evaluations with increasing distances from U.K.and USA. Only Japan and the colonies in the southern continents disturb this clear pattern.

Semple is not a singular example - also philosophers as Johann Gottfried von Herder,Georg Wilhelm Friedrich Hegel,Charles de Montesquieu had similiar biased world images as H.M.Elliott (1979) has shown it in his analysis of ethnocentrism.Similar as the well known historic Chinese world view - even today you can actually stay on the middle point of the world in Bejing - European countries believed into a similar world pattern.The Greeks for example spoke about themselves as cultured and about peoples around them as barbarians - even today Europeans are thinking and acting eurocentrically.Elliott built a model which is similar to the Chinese world image,but it shows only one factor - the distance - as a source of world perception.Actually image building is much more complex - as also Elliott knew.

fig.: 2

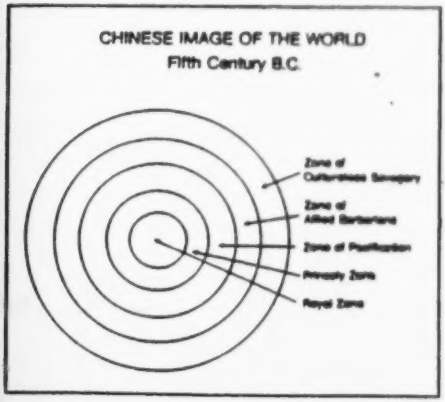
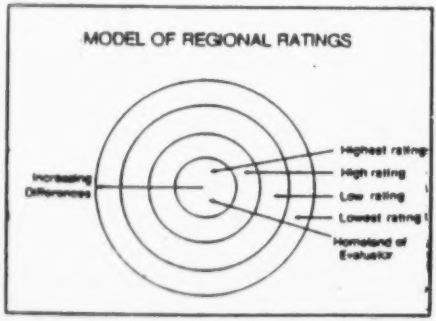


fig.:3



We have now spoken about the importance of knowledge and have learned that knowledge is very often value laden.Even when we ask famous scholars to tell us the "right" information we will experience a worrying discussion or even fight between the different scientists about the"real truth".But more disturbing information we receive from the mass media.

What shall we do now

- in the face of the time problem to increase world knowledge and
- in the face of the value laden information about the nations in the world?

I think there is no way out as to have the courage for knowledge lack and there shouldn't be a way out to teach and to learn knowledge handling or processing information about nations.

Skills for international understanding

Text Analysis :

Information about foreigen people and countries is very often text information.Therefore the children should learn to read these texts critically.There are a lot of textbook analyses now which show that the texts are value laden and full of one sided perspectives and point of views and not without stereotypes and ethnocentrism.It is easier to find biases in older textbooks than in newer one.In the modern textbooks they are more hidden or more difficile.Teachers and students should be sensible to such tendencies in texts,i.e.to be able to find them but also know that it is not possible to describe the whole truth of one phaenomen.The writer has to select.His own background leads him to special questions and perspectives.But he should try to show more than one side of one thing,i.e.to give a multiperspective information and differentiate between facts and value laden meanings in his text.

In order to learn to find facts and evaluations students can record signal terms or whole sentences and group them in:

a.factual information and

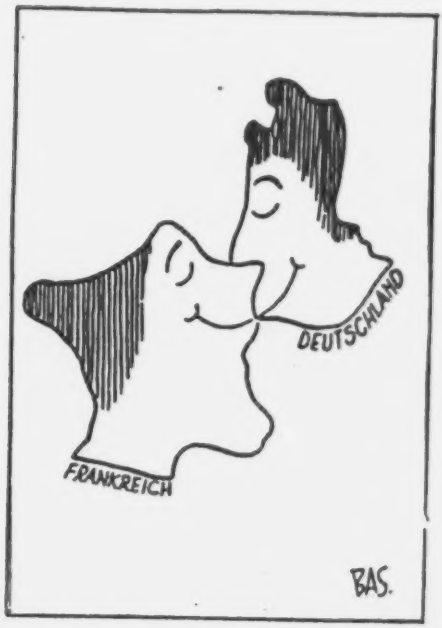
b.evaluating information.

For example:"There are more blacks in South Africa than whites." is fact information,but: "Only fight can help the blacks" is an evaluative meaning.

For such text analyses it is very interesting to compare texts about the same topic from textbooks,newspapers,magazins etc. The "Georg-Eckert-Institut für internationale Schulbuchforschung" in Braunschweig/FR Germany(Hillers 1984) has analysed a lot of textbooks and used quantitative and qualititative methods.Michael Williams (1984) asked for more deeper qualitative methods.

I would'nt like to go into more details and only give a qoutation from an English textbook about the Federal Republic of Germany - "Europe" edited by A.W.Rayns - London 1972,p.53:

"A region of pine forests and pastures,the Black Forest is one of the most picturesque parts of Germany and is a popular tourist area.It is famous for the maufacture of wooden articles,such as cuckoo clocks,toys and carved figures."That's all about the Black Forest - a friendly description - but only maximally 1 % of the income in the Black Forests comes from wood carvings and only ca 5% of the clock production are cuckoo clocks.The following description of the Alpine Foreland is not better "..a plateau from 1,000 to 3,000 ft.high with a rather cold,damp climate and poor soils.Forests and pasture cover much of the land,but barley is an important crop und is used in the breweries of Munich" If you don't know where the barley in Bavaria grows it will be very difficult to find it,large areas have fertile soils and the many tourists in the Alpine Forland enjoy not the cold and damp but the sunny climate as I did in last septembre.This English text is old fashioned image building but friendly and harmless


DEUTSCHLAND
FRANKREICH
BAS.

One last quotation is out of a very modern Indian Geography book with the title"Our Neighbours Our World"edited by the Maharashtra State Bureau of Textbook Production &Curriculum Research - Maharashtra 1984,Preface:

"India is my country.All Indians are my brothers and sisters. I love my country and I am proud of its rich and varied heritage. I shall always strive to be worthy of it.I shall give my parents, teachers and all elders respect and treat everyone with courtesy. To my country and people,I pledge my devotion.In their well-being and prosperity alone lies my happiness."

No word about other nations or the world!More and more countries are stressing more and more their homeland geography.They should think about the following quotation:"No person knows his own culture who knows only his own culture"(Gordon Allport 1954,p.486)

Map and Globe Analysis:

Maps and globes are central teaching aids for geography.They are viewed as scientific tools which give a true image of the world. But the different map projection,the different scales and the different map centres produce different world perceptions.

If the teacher uses always the same map typ the student will get a fixed one sided world view.Here some examples:

fig. 4

This Mercator projection is a typical world map in European schools The main reason is its eurocentralisation - but with the probable effect of eurocentrism.If one compares for example Europe with South America,Europe seems bigger but Europe has only 9,7m km^2 and South America has 17,8 m km^2.Scandinavia with 1,1m km^2 seems bigger than India with 3,3 m km^2.The proportions are distorted and lead to a distorted world view.

fig. 5

In order to soften eurocentrism we should use for example American centred world maps as it is here drawn by a Californian student or

fig. 6

an East Asian centred world map as this example from a Japanese atlas

fig. 7 + 8

My students drew 2 different world maps of the same topic - namely

the origin of members of a congress in Freiburg which show once Europe in the centre and once at the periphery of the world.

fig. 9

World perception does'nt only mean a cognitive topographic perception as a teacher tried to find out in this map.The children should draw the borders of Peru in an outline map of South America. The result is not very encouraging but I think - not denying the worth of such topographic knowledge - more affective components of maps have more educational - cognitive and affective - effects than our "scientific" maps in our school atlases.Here some examples about South America:

fig 10 the Great Prison

fig. 11 Food for the Dollar Crocodile

fig. 12 a Meal for Yankees

fig. 13 Minerals Exploition by USA

fig. 14 the Social Hierarchy from Indios,Peasents,Industry Workers,Bureaucrats,Clergymen to Military

These picture maps send a very strong and affective message. Seldom they are used in classrooms but our children are confronted with them in the mass media.Therefore we should analyse them critically with our students.

The next globe examples signalise some world issues as

fig. 15 world population growth

fig. 16 world hunger at the south hemisphere of the world

fig. 17 apartheid or segregation in the world

fig. 18 bloody globe

fig 19 man - prisoner of earth

I think it could be a good idea to start geography lessons with such cartoons if we want to have interested and in worldproblems engaged children.

The teaching aim should be a multiperspective world view

fig. 20

as it is symbolised by this cover picture of a book about basic ideas on a new human world order.

fig. 21

The next figure is a representation for teaching international brotherhood.It shows the holy cow or earth as the physical basis of mankind,the danger of star wars and the chance for all world religions to life together on our world peacefully - an interesting world view and symbol for peace education,ecological education and international understanding as well.

Maps should'nt only be used i.e.analysed but also be drawn by children in order to develop world awareness. fig. 22
Here a mental world map of a Scandinavian child during the Falkland crisis.Overjoerdet(1984) did'nt find the Falklands in the world maps of her children before the crisis but during the Flakland crisis some younger children even drew the Falklands in the middle of their world map.We see world views are changing. fig. 23
Here an examole of a mental world map of a Brasilian student with many white areas in Asia,without Africa but clear outlines of Italy and Scandinavia.
A very interesting activity is to draw a news choropleth map i.e. to mark all states and cities about which is spoken in the news for example on the basis of the titles of a newspaper.Even more interesting is to compare the outcomes of two newspapers.This activity shows the unbalanced world view we get through news.
To use a world map and to draw a line from all countries which exported goods which can be found in a shop near the school to the homecountry can demonstrate our world dependency and a similar map of all countries which receive goods from a firm in the homeregion can show our world cooperation - two perspectives and reasons for international understanding.

Pictures for international understanding

More than maps and globes photographs and drawings are used as illustrating teaching aids,more seldom caricatures and comics. The pictures seem to be a powerful tool which always depict the reality and give a concrete image of foreign people and places. Only few people are conscious that they ever show only one side or perspective according the view of the camera.Children should experience this perspectivity of pictures.

Here an example about people

fig. 24

A German textbook tries to give the cildren an image of black Africans.Therefore it does'nt show only one person - an "average" man or woman - the typ of an African - it shows 6 different persons.In order to compare the pictures they show only men - no women - and only close ups of heads.Although the authors tried to demonstrate the variety of African people their remains the danger of modelling,typing and stereotyping an ordinary black.

fig. 25

To see the changing features of one person the same book shows 2 individuals in 4 completely different photographs.Not only age but also clothings,make-up and habits produces different animations

fig. 26 + 27

To characterize people is a very dangerous activity.In an Indian textbook you can find this drawing - a head of a man in order to show an average Afghan, but a drawing a whole nicely dressed lady in order to show a typical Burmese.

fig 28 + 29

Comparisions very often lead into pitfalls - as one can see in the same textbook.To illustrate the topic agriculture it shows one lonely peasant in a field of Russia but a big cotton machine in the USA.

David Wright(1981) analysed English textbooks and found in the majority of photographs only traditional activities of Africans and only few modern one.There are pitfalls over pitfalls when we look at pictures.What we have to learn is to be very cautious when we interpret them - especially when we and our children are

confronted with pictures and caricatures in the mass media.
fig. 30
Do'nt these "Devil Warriors" show savage Indians around a white hero and does'nt this picture do the first step to racism ?
fig. 31
Do'nt the terms "yellow or blue ants" dehumanize Chineses? And does'nt a picture of a mass of people transform them to nothing worthwile?
fig. 32
Do'nt the advertisments with so called sweet moors instrumentalize human beings?
fig. 33
What about our attitudes against clothing habits?These Flamish shoes and Bavarian hats do'nt seem to fit Africans.This picture brings us to laugh but it should also bring us to think.For this context I found 2 interesting newspaper articles.A German female author reported about an Africa visit and about her feelings while talking to African women with naked breasts.She also described her experiences with African men when she was wearing shorts.Other cultures,other customs,other values!
The author of the second newspaper article was an African lady. She complained:"European women show their legs without shame and corrupt young African men."
fig. 34
The eating habits are quite different.Should'nt we be happy to have such a variety of attitudes,customs and behaviours in our world? fig. 35

I think we should be very cautious if we evaluate other people,but we should also use some principles if we compare different behaviours.One principle is reciprocity.We all know the photographing European tourists in developing countries.What about photographing Africans in our garden,farm,street or housing?
fig. 36
We know the principle of reversibility or reciprocity but we also know that there are some more equal than others.
fig. 37
Empathy,i.e.to see with the eyes of others is a good idea to learn to understand others.

The following pictures and caricatures possess a very strong emotional quality and lead to world issues and world awareness:

fig. 38 Dependency
fig. 39 First,Second and Third World
fig. 40 Developing aid
fig. 41 Indian and German Holy Cow
fig. 42 Monopoly of Religion
fig. 43 Mission
fig. 44 Terrorists
fig. 45 Beast
fig. 46 The Anonymous Threat

Terribly dangerous are the pictures about the "enemies". Contrary to these problem laden pictures and caricatures about other countries are the pictures of selfpresentation.The nations are looking for nice pictures and signals to give foreigeners a good feeling when they see them.In order to win their sympathy they transform these pictures into identification symbols as:

fig. 47 animals
fig. 48 landscapes
fig. 49 statesmen/women
fig. 50 buildings
fig. 51 women
fig. 52 minorities.

To learn and to train to find the view and interest of a photographer and drawer is a very important activity to process information about other nations in an adequate way.

Value Education for international understanding

We have seen international understanding is very value laden area Therefore we have to be able to analyse values.John Fien develope the following method in order to think more deeply about a choice and to indicate the grade of strength of an evaluation.The studen have to indicate,whether they strongly agree(SA),mildly agree(MA) mildly disagree(MD) or strongly disagree(SD) with statements as the following examples:

1. The U.S.S.R. and U.S.A. should be friends.	SA	MA	MD	SD
2. Racial discrimination should not happen.	SA	MA	MD	SD
3. Proven acts of racial discrimination should be punished by jail sentences.	SA	MA	MD	SD
4. I should try to find out more about _____and_____ (2 low rated countries).	SA	MA	MD	SD
5. People from _____(lowest rated country) probably envy people from _____ (highest ranked country).	SA	MA	MD	SD
6. _____(lowest rated country) should be more like _____(own country) then the people would be better off.	SA	MA	MD	SD

(Fien-in: Slater/Spicer,1980,p.263)

If one uses a 3-or 5-point-scale there will be the danger of "regression to the mean" or of"no opinion".The children should be motivated to a thoughtfull judgement.

Simple semantic differentials can also be used for value inquiri

Country x is:

	1	2	3	NEUTRAL 4	5	6	7	
Depressing								Cheerful
Big								Small
Open								Enclosed
Spacious								Cramped
Quiet								Noisy
Ugly								Beautiful
Uninteresting								Interesting
Easy to reach								Not easy to reach
Well designed								Poorly designed
Fashionable								Unfashionable
Dirty								Clean
Good for children								Bad for children
Healthy								Unhealthy
Commonplace								Unusual
Could be altered								Could not be altered
High class								Low class

(Tilley,R.G.1974)

fig.53 Semantic differential

The starting of a value analysis could be a problem and a proposal for solution of the problem - for example:
There are differences between German and Turk children in schools
1.They should go into different schools.
2.They should join the classrooms.
V.Slater(London 1982,p.86) recommends the following procedure:

1. Individually students vote 'for' or 'against' the resolution and write down three reasons for their decision.
2. Those who voted alike are grouped in pairs and each pair decides on the best four reasons they have written out for their choice.
3. Pairs 'for' and 'against' join together where numbers permit and argue out and select the best reasons on each side and list the values underlying each reason.
4. The values, further clarified by class discussion, can be listed on the blackboard.
5. A second vote is now taken and students give their reasons once again in a discussion of any changes they make to their voting and/or reasons.

John Fien (1980 - in:Slater/Spicer 1980,p.266) developed a checklist for a valuing process(see next page!).Perhaps this method is a little bit complicated but I think its message is very important for our value laden task to teach international understanding.We should make this method easier and practize it once or twice with our 10-12 years old children,in order to make them more sensible for this quite difficult but important value factor.At the end of such a unit the teachers should ask themselves:

1.Have I presented the topic in a way to activate the feelings of the children?
2.Did I provide information that allowed the students to see various value positions?
3.Have my students analysed many pros and cons and their implications?
4.Were my students able to identify the values that underlie their decisions?
5.Is there a probability that the children act upon their values?
6.Were my students able and ready to choose their values(egality, freedom,social justice etc.) freely?

VALUES ANALYSIS (...)

ISSUE : Should we allow unlimited immigration of war and political refugees into our country?

A. IDENTIFICATION OF POSITION AND REASONS (Class/group discussion)

YES	NO	YES BUT CONTROLLED NOT UNLIMITED IMMIGRATION
1.	1.	
2.	2.	1.
3.	3.	2.
4.	4.	3.

B. MY POSITION .....

C. MY REASONS 1.
2.
3.

MY REASONS ARE BASED ON THE PERSONAL VALUES THAT:

1.
2.
3.

E. EXAMINE THESE VALUES IN THIS CHECKLIST: ANSWER YES OR NO ONLY

Value Process	Checklist Questions	Value No.1	Value No.2
Choosing	1. Have you chosen your value after thoughtful consideration of the pros and cons and consequences?		
	2. Have you chosen it from alternatives?		
	3. Have you chosen your position freely?		
Prizing	4. Are you proud of (do you prize or cherish) your value?		
	5. Have you told other people about your value?		
Acting	6. Have you acted on or done anything because of this value?		
	7. Are you consistent in your behaviour on this value i.e. do you act on this value in all aspects of life?		

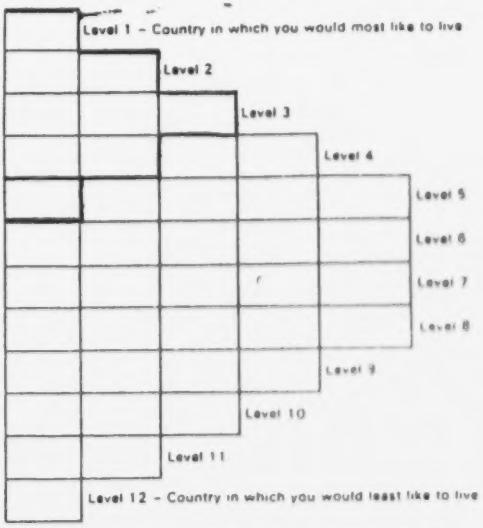
Figure 5.1 Checklist to the Valuing Process (John Fien 1980)

Inquiry and action learning for international understanding

Children should'nt only use text-,map- and picture-information but also collect their own data and act for international understanding. Preference Analysis is a method to collect subjective data. For example the teacher can ask the children: "Where on earth would you like to live?" or "Where would you holiday?" etc. Or the children can ask the same questions parents, relatives, other children or adults. They can use a diagram and draw a mental map - as shown in the following figure .

fig. 55

Where on earth would you live? A preference sorting diagram



Sort the forty countries named below into the 12 levels in the diagram

Algeria	Finland	Italy	Singapore
Argentina	France	Japan	South Africa
Australia	West Germany	Malaysia	Spain
Brazil	Greece	The Netherlands	Sweden
Canada	Hong Kong	New Zealand	Switzerland
China	Hungary	Nigeria	Tanzania
Cook Islands	India	Peru	Turkey
Cuba	Indonesia	Philippines	UK
Czechoslovakia	Iran	Poland	USA
Egypt	Israel	Saudi Arabia	USSR

(P.Slater 1982,p.54)

Within the diagram and with the helo of a world map with the labelled countries the children have to rank the different nations. Contrary to the above diagramm I would like to recommend to choose only 9 countries and to give the children cards with the name of a country which fit into the soace of the diagram and which make it oossible to change the first choice after having reflected about the ranking about different levels more deeoly.The children should at first decide about the too and bottom country and than come to the more neutral evaluations in the middle.After finishing the ranking task the students should write some arguments for their choice and discuss about their reasons.Having done that the student can draw a choropleth map of the preferences.F.Slater recommends for the analysis of the outcomes the following points:

> 1 Make a list of the reasons for your choices. (Reasons which have been given by students include (1) cultural similarities and differences, (2) climatic and scenic attractions, (3) standard of living and way of life as well as how well they *feel* they know the countries from personal or vicarious experience based on books, the news media and so on.)
> 2 Classify the reasons put down on your list and decide what reasons you have for most strongly and least strongly preferred countries. Do they derive from direct or indirect sources of information? Which do you think is most helpful?
> 3 *Where* are the countries which you have chosen as most and least preferred? Does distance appear to have any effect? Are your most/least preferred countries closest/furthest from your country? What most influences your knowledge of countries? Bring up any other ideas to explain your choices which you think the group has overlooked. Explain why you think they are important.

(Slater 1982,o.55)

There are a lot of other methods to find original and subjective data as:

Associations - if one hears the word of a country:

- associations of words and writing them down,
- " " oersons "
- " " adjectives "
- " " animals or landscapes "
- " " buildings or food "

- Drawing a picture or symbol for a country
- Drawing a mental map of a country,continent or the world,
- Either or choices as:
  For neighbours I would prefere people from _____or
  _____.Which?
- Idea associations as:
  If I gave you a wonderful gift,I must be born in_____.
  People who live in_____shouldn't throw stones.
  Gentleman prefer_____ for their holidays.
- Making an exposition about a country
  about developing countries,
  about international understanding.
- Exchanging with other-schools in other countries
  - letters
  - teaching material
  - goods and ideas

  (according to the project: Children write for children -
  Where and how I live)
- Starting a partnership with a school in a foreign country.

International understanding will remain an open end task for students,teachers and adults.Let me finish with one last idea: Some schools have relations with schools in developing countries and collect money for them.This activity is difficult to handle. Never the children should get the feeling:
We are the "haves " and they are the "have-nots".
Perhaps we produce more goods,but there is also the possibility that their social and cultural life is more developed than ours. "No person knows his own culture who knows only his own culture" (G.Allport 1954,p.486)

References:

Association of American Geographers.Geography and International Knwoledge.Washington,DC 1982
Allport,G.W.:The nature of prejudice.Boston.1954
Elliott,H.M.:Mental maps and ethnocentrism-in:J.of Geogr.1979,25off
Wien,J.:Intern.Understanding-some classroom activities.in:Slater
Hill,A.D.:A Survey of the Global Understanding of American College Students.The Professional Geographer.33,237ff
Hillers,E.: Afrika in europäischer Sicht.Braunschweig 1984
Maksakowsky,V.P(ed.): The Economic Geography of the World.Moscow79
Maharashtra State Bureau of Textbook Production and Curriculum Research: Our Neighbours.Our World.-Maharashtra/India 1984
Michener,J.: The Mature Social Studies Teacher.Soc.Ed.35,764ff
Overjoerdet:Children's Viwe of the world during an international media-covered conflict- in:Haubrich,H.:Perception of people and places through media-Freiburg 1984
Rayns,A.W.: Europe - London 1972
Saveland:Long-term memory and place vocabulary-in.Haubrich 1984 (see Overjoerdet!)
Stoltman:An International comparison of student Achievement in Geography - in: Haubrich -(see Overjoerdet!)
Rice:Geographic knowledge and attitude:The Americas - in: Haubrich 1984 - (see Overjoerdet!)
Tilley,R.G.:The application of semantic differentiation in the classroom-in:Profile,Vol.7.No.19.Part 1
Slater,F.:Learning through Geography - London 1984
Williams,M.: Lehrbücher und neue Konzeptionen im Geographieunterricht von Entwicklungsländern-in:Int.Schulbuchforsch.-Braunschweig 1981,Heft 3,Seite 232 ff
Wright,D.:Vorurteile und Selektionsmechanismen im Bildmaterial über Afrika.in: Int.Schulbuchforsch.-Braunschweig 1981,H.3,Seite2o9ff

Further Readings:

Carnie,J.: Children's attitudes to other nationalities - in: Graves,N.:New movements in the study and teaching of Geography - London 1972,p.121 ff
Hess,R;Torney,J.V.: The development of political attitudes in children.Chicago 1967
Piaget,J.;Weil.A.-M.:The development in children of the idea of the homeland and of relations with other countries.-in: Int. Science Bulletin.(Unesco) vol.3,1951,p.561 ff
van den Bosch,H.: Vorureile im Erdkundeunterricht - in: Int. Schulbuchforschung.Zeitschr.des Geogr-Eckert-Instituts Braunschweig 1983,5,p.26ff(there are many important articles in this journal)
Slater,F.;Spicer,B.:Perception and preference studies at the international level,tokyo 198o
Haubrich,H.: Perception of people and places through media Freiburg 1984(Päd.Hochschule D7800Freiburg)
Haubrich,H.:International Focus on Geographical Education-(Georg-Eckert Institut D3300 Braunschweig) 1982 p293ff
Billmann,O.:Ethnozentrismus im Geogr.unt. in:(see v.d.Bosch)1984,6
Council for cultural Co-Operation of the Council of Europe in Strasbourg: many publications - see documents of the seminar!
- Development Education in Primary Schools Strasb. 1983
- Ed.f.Int.Understanding...The case of Japan-Strasb.1981
- Teaching about the USA in Sec.Schools in West.Eur.-Strasb.1982
Cogan,J.& Nakayama,S.: The role of Geography in developing international understanding.Soc.Education,Vol.49,no.1 January 1985